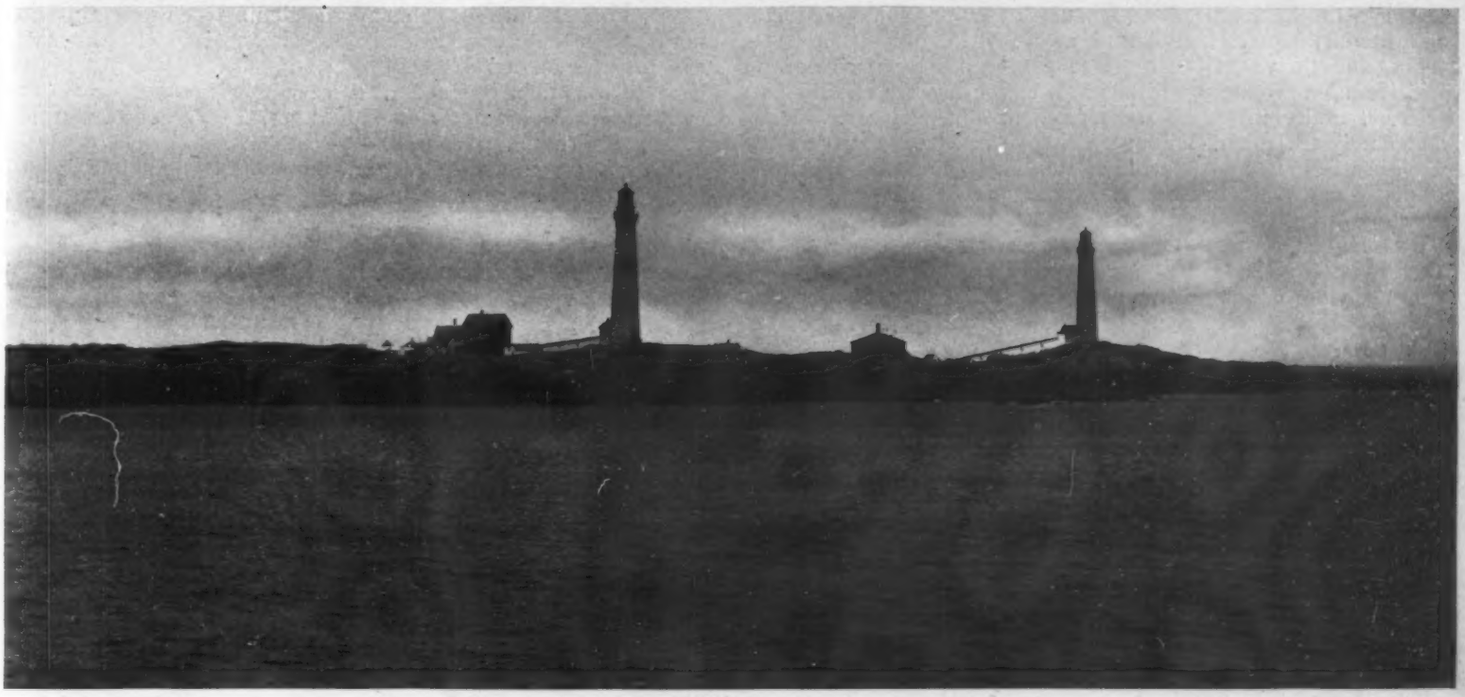
YACHTING

VOLUME XII, NUMBER 5 NOVEMBER, 1912 25 Cents a Copy $2.00 a year



THE TWIN LIGHTS OF THATCHERS ISLAND OFF OLD "MOTHER" ANN

A Mid-Winter Cruise on the New England Coast

From Providence to Grand Manan in a 40-Foot Power Boat

By E. L. ARNOLD

ANY of the yachtsmen whose craft congest the traffic of Narragansett Bay from June to September would have had difficulty in recognizing as the same place the bleak, Arctic-looking inlet through which we ran down to the sea in Raritan. The wind was at N. E., with a high glass, and a fine, driving snow was falling rapidly. Even inside the bay the water had been whipped into a miniature combing slop.

Summer places along the shore had their windows boarded over; here an Italian garden with a trellised pergola around its edge lay half hidden under the snow, while a little farther along the shore a marble reproduction of some ancient goddess's outward form lifted one shivering arm and shoulder above the clinging embrace of a monster drift. Through the white haze of many snowflakes the noonday sun shone dully, and, once the dark outline of the shore had vanished, the crested seas which formed our constricted horizon blended indistinguishably with the sky. We were bound for Eastport, Me.

The day after Christmas my engineer, Ivan Rackliff, and I had run the Raritan up from Newport to our yard at Sabin's Point to put her in shape for the voyage. It was our first view of her, and candor forbids that I should say it was entirely a source of comfort. She proved to be a high-sided old wagon about 40 feet long, with 10 feet beam, very straight sheer, and a trunk cabin as high as that of the ordinary glass cabin launch. This house was of 5/8-inch whitewood panels and leaked where it set on the deck, with the result that everything in the boat stayed soggy and damp. The engine was a 4-cylinder Twentieth Century, and gave us excellent service. In fact, it never balked once on the entire voyage, although it had a pretty good excuse for doing so on one occasion, at any rate, as will appear in due course.

We hauled her out and cleaned the bottom and rigged a steering gear inside the cabin. Then, when preparations in the way of securing stores, fuel and gear had been gone through with, Raritan was slid back into the cold and briny on December 30, and the voyage began. The weather, which, up to this time had been exceptionally mild and pleasant, now turned cold and windy, whence it devolved that we ran down Narragansett Bay, as already noted, in a correct imitation of a Newfoundland blizzard.

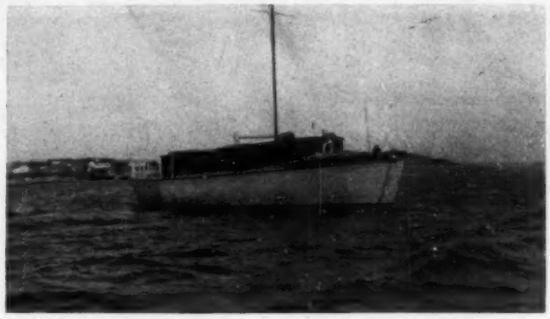
Once through the gut between Prudence and Patience Islands, Raritan began to feel the ground swell. As she slung quite a little water over her weather rail, we had to close the hatch and batten her down. Pretty soon I gave the wheel to Ivan and started to rustle some grub; but about the time I had the coffee pot going nicely my knees began to get wobbly, and I wondered if I was going to be seasick. Just then Ivan called to me to come and take the wheel, saying that he was ill. I perched myself on the high stool we sat on to steer, and it immediately dawned upon me what the trouble was, for as soon as I stuck my nose up under the cabin carlines I got a whiff of gasolene fumes which made my head spin.

How long I stayed there I never knew. What I realized next was that Ivan was picking me up from the floor and taking me out on deck, where I partially revived. He then took the wheel and I worked my way into the cabin, where I got onto a transom, and when I was able to sit up we were tied up to a small dock on the north end of Conanicut Island with Ivan laid out on the other transom.

After a time I managed to get out of the boat and over to the Light, about a quarter of a mile away, where my father is the keeper, and they sent the carriage for Ivan. By 6 o'clock we were feeling well enough to tackle it again, my brothers helping us to get under way. So we arrived in Newport at 6:45, and immediately turned in, without a thought of eating, trusting to the oil heater to keep us warm. After a cold and miserable night we turned out, got breakfast, and went uptown to buy a stove—a real stove—that would eat coal and, incidentally, keep us warm. This we had aboard and set up by 11 o'clock; then we sat down to talk it over, knowing that it was gas that had put us out of business, but being unable to locate the leak. The log says: "This day we rove halliards, and bent mainsail and jib, and finished fitting out."

Next day we were under way at 7:50, with clear sky and a light, northerly breeze; we went out by Fort Adams and headed east for Hen and Chickens Lightship. It was a most beautiful day, clear and warm, with almost no wind, and the trip through Quick's Hole and up Vineyard Sound was a real pleasure.

It had been the original plan to go into Hyannis; but at sunset, the weather continuing fine, with the barometer falling very slowly, we decided to keep on, and went over the shoals and up the Cape shore in fine shape. At 12 midnight, the Highlands bore N. N. W., distant about 4 miles, there was a light, westerly wind and a smooth sea, so we let her go right across for Gloucester.



RARITAN WAS NOT ALL THAT COULD BE DESIRED FOR A WINTER CRUISE TO THE BAY OF FUNDY

As we drew out from the Cape the wind freshened to a good breeze and the boat rolled considerably with a quick motion, due, of course, to her flat bottom and hard bilges, making it mighty difficult to move around much; but at 3 a. m. the wind suddenly hauled in N. E., with a squall of rain and snow, which left us with a thick fog that lasted until daybreak. At 6:25 we sighted Eastern Point right over the bow, and by 8 a. m. were tied up at a dock near the Electric Light Station, where we took 75 gallons of gasolene.

The day was a beauty, and we could have gone around Cape Ann as easily as not; but Ivan was pretty well done up by the twenty-four hours' trip around the Cape, so I thought it advisable to hold up. I cleaned the ship while he slept, and we turned in, congratulating ourselves that we had taken a long step on the road; but alas! next morning the wind was N. E., snow was falling slightly, and the barometer had dropped to 30.10.

About 8 a. m. we went out by Eastern Point to have a look at it, heading down towards Thatcher's through a sea that was nasty and apparently gaining, for she finally dropped into a hole with such a crash that I picked out the first soft spot to turn in and went back to the dock.

We started again Sunday, January 7, at 9 p. m., and while the weather was very cold, the sky was clear and moonlit. There was a moderate breeze from the N. W., so we decided to take a chance at Cape Ann, hoping to be at Portland the next night. We had it smooth under the lee of the Cape, but, once out by the Salvages, it breezed on fast, and soon the boat was plunging into a heavy head sea and icing up badly—so badly indeed that I hauled the course to the westward, trying to work her into smoother water.

The skiff, which was lashed on top of the house, worked loose, and we were afraid it would go adrift entirely, but were unable to do much, on account of the ice, which covered everything, and the heavy seas which swept over her. Looking out of the 10-inch portlight in the forward end of the house where we steered, the prospect was not pleasant at all.

In spite of being slowed down some, every third sea would come a solid wall of white water, crashing around the house and spurting in so that I was wet through standing at the wheel. To add to our troubles the funnel to our stovepipe got jammed, forcing the coal gas into the cabin and deadening the fire. This would not do with the thermometer below zero, so I spent a mighty bad five minutes on top of the house fixing it, and worked my way back to the cabin covered with ice and wishing I was in some good harbor down in Florida. However, the worst of our troubles were yet to come.

The night continued clear, but with much vapor low down on the water, this at times being very thick. At 3 a. m. our position, as nearly as I could determine, was 3 miles S. S. W. from the Isles of Shoals Light, which I could see quite often in the holes in the vapor. Suddenly the Raritan brought up heavily on something and stopped short, though apparently not aground.

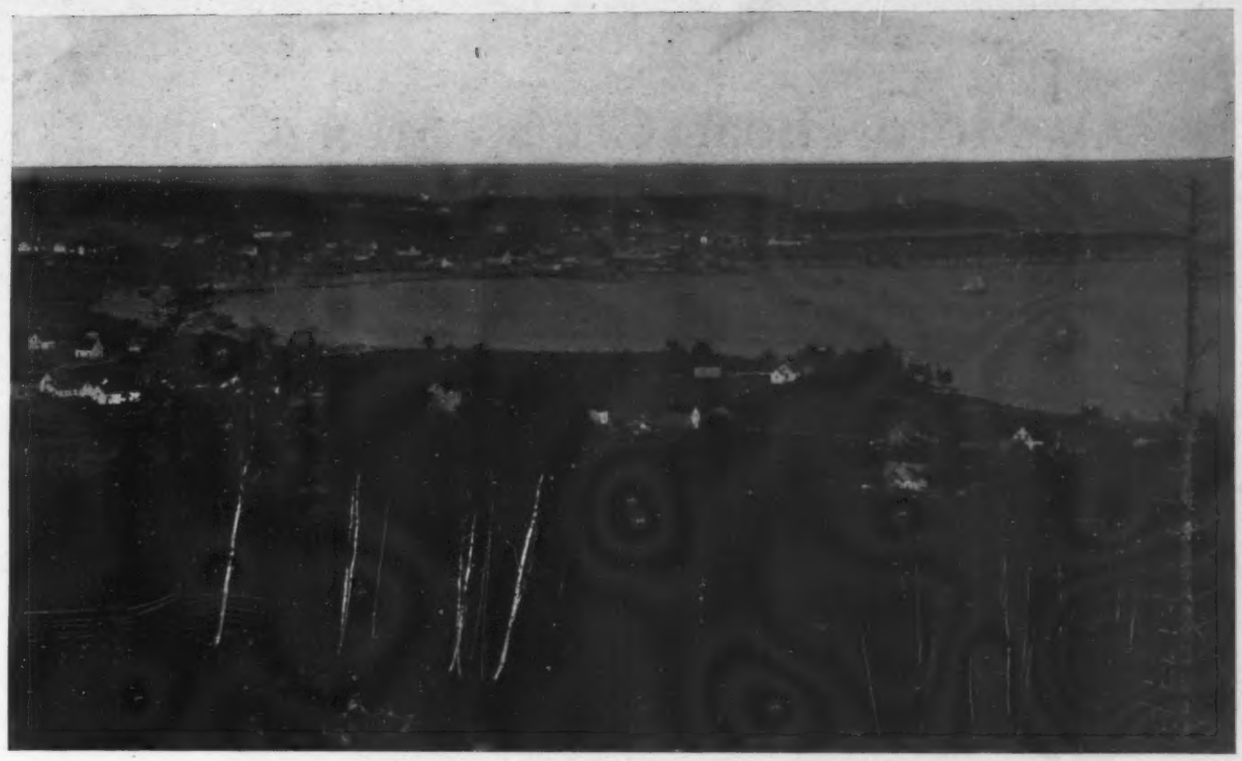
I rushed out on deck, and about 20 feet off the starboard quarter saw something in the water which looked like the corner of a vessel's house. Calling to Ivan to see if he could start the engine, I sounded, and got about 12½ fathoms. Just then the engine started with a slow, racking motion, which scared me almost stiff with the fear that it would stop again; but Ivan said: "The shaft is sprung and the propeller is bent, but I guess I can keep her going." And, sure enough, he did—Ivan was a genius.

Fortunately the wind moderated considerably and the water became comparatively smooth, so we were able to work her up at the rate of about 2½ miles an hour until we brought the Isles of Shoals broad on the starboard beam, when I hauled her right in toward shore until we got three fathoms (right off Rye Ledge); and after breaking the ice off the anchor and cable I anchored her by the stern, as there was so much ice forward that I was afraid of slipping overboard as she rolled. Then we turned in!

Next morning all hands turned out at 9:30 and we worked our way into Portsmouth, with a light N. W. wind and a fair tide, which carried us up the crooked channel at a good rate, so that we hauled in and tied up to a lumber dock at 11:30 and went ashore to find someone to haul the Raritan out. Finally, we brought up at the Portsmouth Yacht Club: I have been knocking around yacht clubs for some years, but for real, genuine hospitality these people beat the whole lot. They had a railway that would take the boat, and they loaned it to us; also, they gave us a key to the club-house and offered us the use of the kitchen: in fact, they made us free of the entire outfit, and, in addition, helped us to haul the boat out, which was some job, as the railway was short and steep.

We enlisted the services of Capt. O'Brien, who lives near the club-house, and he and Ivan took the shaft out and carried it to a small machine shop to straighten. That night we had a howling gale from the east, with a heavy snowfall, the wind shifting to the south towards morning. Tuesday morning the weather softened enough for me to pound the ice off the boat: it was 6 inches thick everywhere forward of amidships, the side and head lights being just shapeless mounds of ice and the headstay 4 inches thick 5 feet up from the deck.

I got most of it off the outside, though the ice inside the cabin around the portlight frames, which had made its appearance on January 4, was still with us. During the day the wind hauled N. W., the thermometer slumped again, and Wednesday morning everything was frozen hard and fast once more; so that after we got the shaft in and the boat launched we had to break her out into the channel before we could tie up to the spiles in front of the club-house.



FLAGG'S COVE, GRAND MANAN, OUR ULTIMATE DESTINATION

Thursday morning the wind was still about west, with a clear sky and thermometer 5 below. After breakfast we went out, bound for Portland. After pounding and rolling around for a while in the rips off Whale Back, we got her straightened out for the run up the coast. The wind blew half a gale and made her roll hard, steer wild and ice up badly; but we kept her going, and at 12 noon Cape Porpoise bore N., distant one mile. We passed Cape Elizabeth at 2.32 p. m., and from there had smooth water, arriving at the dock in Portland at 3:45, with the port side of the boat a solid mass of ice, so heavy that it listed her perceptibly.

That night we put in gasolene and took on coal, and Friday morning at 8:20 broke her out of the ice at the dock and started east with a light N. wind, cloudy and spitting snow, temperature 8 below. We went through White Head Passage, where there was lots of ice, and at 12 noon, with the wind blowing hard N. E. and sea increasing—with snow so thick that we could see but a short distance—we had Sequin bearing S., one mile distant, and hauled our course in for Pond Island Light, at the mouth of the Kennebec River. We made the light all right, and, going up the narrow, crooked channel to the east of the island, discovered a dock on the eastern side of the river, to which we tied up and promptly got below to nurse the stove and curse the weather.

Towards evening the crew of the Life Saving Station came alongside, and the captain advised us to move to a small dock on the other side of the river, just around a bend, giving as a reason the danger of being crushed by drift ice where we were. Of course, we did as he suggested, lying for a while very peaceably alongside the dock, which was sheltered by a high bluff; but I had not been turned in long enough to go to sleep when the ice commenced to grind along by us, and for three cold hours we did our little best to keep her from being smashed in, though once in a while it would pinch her so hard that we could see her sides spring together. After a while the tide shifted so that the ice no longer jammed in on us, and we turned in and slept until morning.

Saturday the ice began to set in on us about 8 a. m., though not as hard as before, and at 9:20, the wind blowing hard about N., thermometer 18 below, and a vapor on the water so thick that at times I could not see a hundred feet, we picked our way out of the river to have a look. Outside it was blowing a gale, the boat made bad weather of it, even so near the land, and every drop of water she threw froze where it struck; so back we went to the shelter of the dock, where we stayed, keeping the little stove red-hot and wishing we were almost anywhere else. Fortunately, the engine had not quit, or we would have started off for the coast of Spain.

The engine room had a coating of frost an inch thick all over the ceiling, and on the sides down to the level of the deck all the metal work of the port lights was solid ice; the bilge water was frozen, and, besides all this, I had contracted a very severe cold—so we were getting pretty sick of winter yachting.

We did not have so much trouble with ice that night, and Sunday morning the wind was moderate, about N. N. W., the severe cold still continued, and the vapor so thick that I did not try to get out until 8:50. At 10 a. m. Ram Island Light, bearing E. by S., distant three-quarters of a mile, snow began to fall. At noon Franklin Island Light bore E., distant half a mile, and we went on by Pemaquid. Passing White Head at 2:15 (with thick snow) we kept on up Mussel Ridge Channel and in by Owls Head to the steamboat dock, where we tied up on the south side at 3:45, and I went ashore to find a doctor, for my cold was beginning to worry me.

Tuesday was clear, but intensely cold, with strong N. W. gales. After some talk, we decided to abandon the trip until the weather was more moderate; so, leaving the boat in charge of Ivan, I took the train for home.

I heard nothing more of the Raritan until about the middle of March, when the owner wrote, asking me to go to Rockland and take the boat to Flagg's Cove, Grand Manan Island. Accordingly, March 20 found us putting stores aboard and getting ready to go out.

The next day we took on gasolene, and at 10:40 we left, the wind being moderate, about N., with heavy clouds, and very cold. Going through Fox Island Thoroughfare at 12 noon, we had heavy squalls, but passed Bass Harbor Head at 4:25 and anchored in Northeast Harbor at 5:30. It was thick and cloudy, and there was ice three feet thick all around the shore at the head of the harbor; while Northeast Harbor may be nice in summer, I thought I had seldom seen a more dismal spot.

March 22 we were under way at 6 o'clock and found ice nearly an inch thick which had formed over night, but we worked her out slowly, to avoid cutting her planking through, and at 9 we crossed Petit Manan Bar, with a clear sky and a moderate W. N. W. wind. Going through Moosabec Reach, the wind in-

(Continued on page 325)

A Motor Boat Cruise After Game

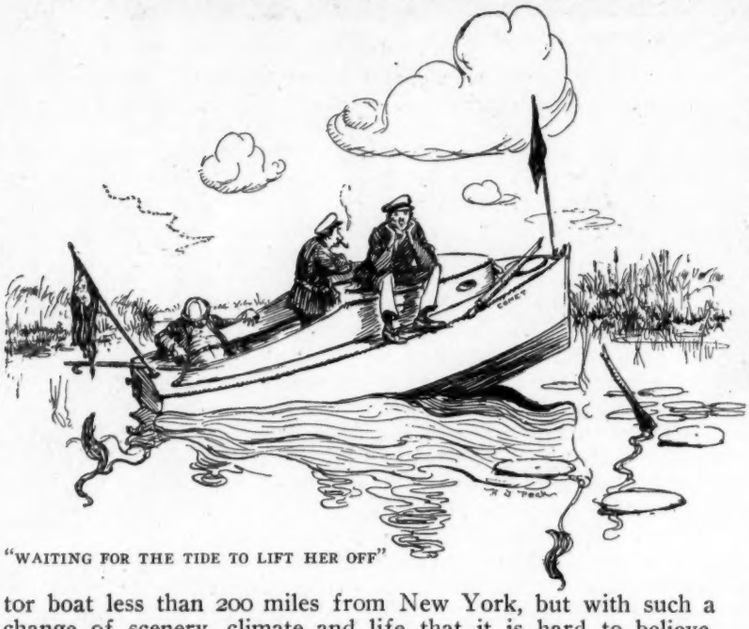
Being the Record of a Trip From Bay Head to Cape May in Search of Ducks, Fish and Pleasure

By A. S. ATKINSON

EVERY season when the cool, bracing winds of autumn send the blood jumping through the veins and the honk of the wild geese begins to sound at dawn from some aerial height, the man with enough of the savage left in him to respond to nature's call gets inoculated with the fever of the hunt. The call of the bull moose attracts many to the wilds of Maine and Canada, or, if there is deer to be had, the Adirondacks may beckon with no uncertain hand to both novice and old hand.

But the hardships of the hunt must be measured up against the results, and sometimes it reads like this: Two weeks of freezing and suffering, one frozen ear, two frost-bitten toes, one sprained ankle, sundry cuts and bruises—and one deer, worth five dollars, but actual cost two hundred! There is fun in it, nevertheless. for those who like it, or they wouldn't do it just for the sake of telling a deer (dear) story at the club when they get home alive again.

Compare such an experience with a duck hunting trip in a motor boat less than 200 miles from New York, but with such a change of scenery, climate and life that it is hard to believe. Right here some old hunter will interpose and say that shooting ducks from motor boats is unsportsmanlike and against the law. It is both, and real sportsmen don't do it, either. Neither did we. We used the motor boat simply for transportation, and did our shooting and hunting from a small duck boat or sneak box hired for the occasion.



"WAITING FOR THE TIDE TO LIFT HER OFF"

New Jersey's coast line is one of the most picturesque of any State in the Union, and through the hard work of the Mayors and leading business men of the various coast resorts she has achieved an inland waterway that makes ideal traveling for the motor boat. This inland waterway should not be confounded with the old one which crosses the State of Jersey by river and canal to connect with the Delaware River and Bay. It is typically a coast waterway, protected from the ocean by narrow stretches of sand, and affording all the pleasures of life near the sea without any of its dangers and inconvenience.

The only outside trip we took was the run from New York Bay to Manasquan Inlet, a distance of about 27 miles. This was made in less than four hours, and on a clear, cool day, with a calm sea. Once in the inlet, we were ready to begin our trip, which eventually extended to Cape May—a distance of about 118 miles. It developed on the way that we were not the only ones who had planned the trip, for boats accompanied us, keeping abreast of us for many miles, and then losing themselves in the bays and sounds for a few days, only to reappear at later intervals for another friendly race.

Most of the route lies through open bays and navigable thoroughfares, and the rest of the connecting links have been artificially constructed by the enlightened business men before mentioned. The work is not yet completed, and it is a lucky man who can make the whole trip without poking the nose of his boat on sand bars and mud-flats if he attempts to cross them at any time except when the tide is full.

Beginning at Bay Head we went south to Cabbage Thoro, on the southerly shore of Great Bay, a distance of about 50 miles through broad, open bays. There is plenty of water and wide reaches in some places. But south of this to Cape May the route lay chiefly through winding thoroughfares, which connect bays and inlets in the most unexpected way.

We had three primary objects in view, and each should be taken in turn. First, we wanted to take a motor boat cruise in new waters, which would compensate, in a degree for the lack of a summer vacation; second, we were after ducks and fish, and we were assured that both could be found in abundance on Barnegat Bay; and third, we wanted to work gradually southward to a warmer and milder climate for a rest before returning home to begin again the grind of business life for the winter.

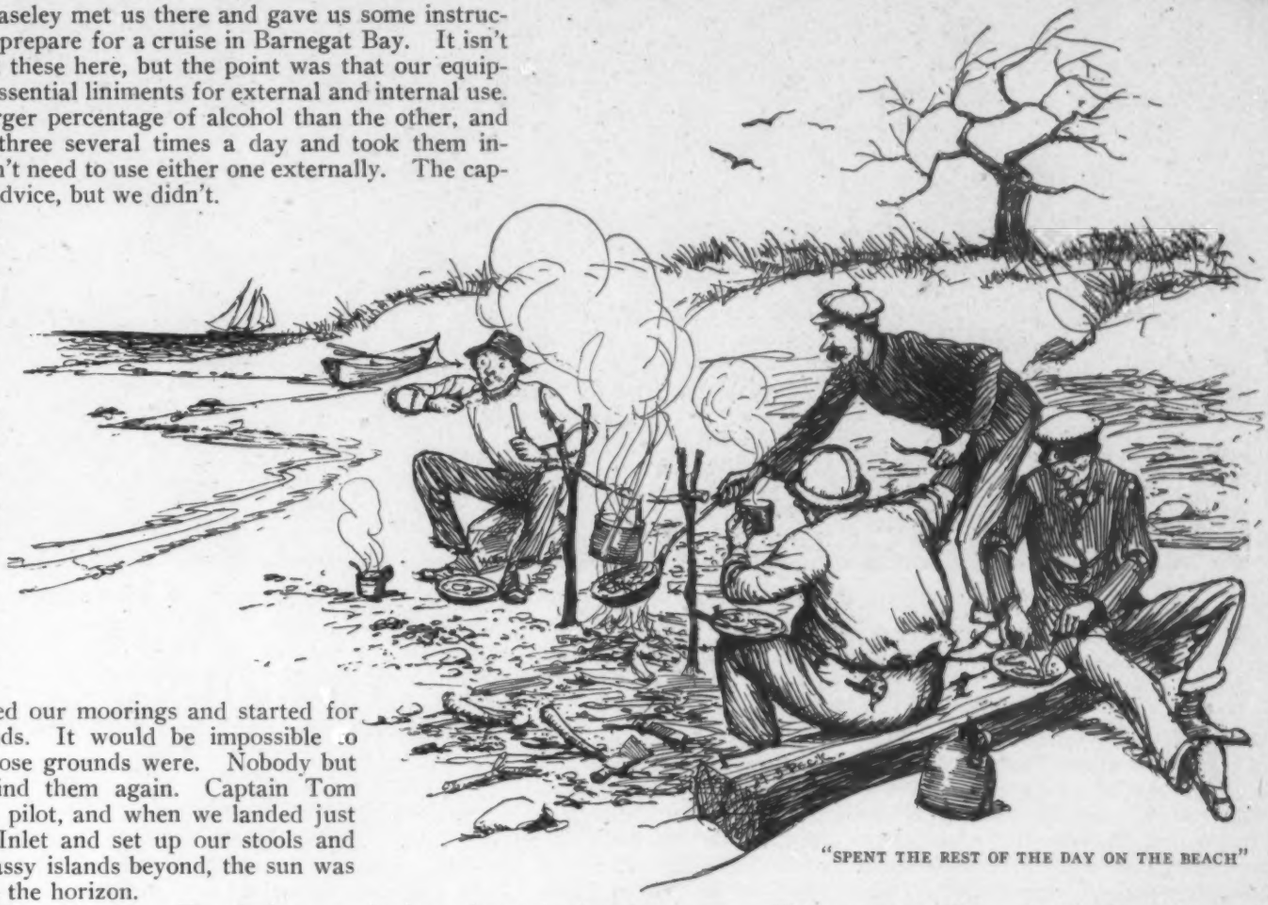
We got a run for our money the first day. From Bay Head to Forked River is a good stretch of open water, and one that offers ideal conditions for racing or slow, leisurely chugging along. The long stretch of sea beach on one side and the mainland on the other gradually separate, and the bay grows so wide that a nasty sea is easily kicked up. We found this out when abreast of Seaside Park, and from there on to Forked River we had all the head wind and sea we cared for. The spray hood was constantly in use, and when we reached our destination we had to shed wet oil skins before we could settle down to supper.

"THERE WERE NO DUCKS, BUT THE INSECTS WERE THERE AND SO WAS THE SUN"

Captain Tom Beaseley met us there and gave us some instructions about how to prepare for a cruise in Barnegat Bay. It isn't necessary to repeat these here, but the point was that our equipment lacked three essential liniments for external and internal use. Each one had a larger percentage of alcohol than the other, and if you mixed the three several times a day and took them internally you wouldn't need to use either one externally. The captain took his own advice, but we didn't.

Captain Tom had the dory ready for us; also duck stools and a varied assortment of implements used in decoying and slaying innocent wild birds and fish. Captain Tom spent the night aboard with us relating stories of Barnegat Bay, and left us only at midnight to get a few hours of sleep before dawn.

It was barely light in the morning when we slipped our moorings and started for the ducking grounds. It would be impossible to state just where those grounds were. Nobody but an expert could find them again. Captain Tom acted as guide and pilot, and when we landed just west of Barnegat Inlet and set up our stools and decoys near the grassy islands beyond, the sun was just pointing above the horizon.



"SPENT THE REST OF THE DAY ON THE BEACH"

We made no killing that day. The ducks weren't there, but the insects were, and so was the sun. It was autumn, but the sun was hot, and we soon had a nice coat of sunburn covering our sensitive skin.

"Where are the ducks, Captain?" we asked, finding that we had nothing to shoot at.

"Ducks?" answered our guide, slowly; "why, they're takin' their mornin' bath in the surf, an' they shouldn't be disturbed. Now, talkin' about fishin'; I know where you can pick 'em up by the ton. Great day for fishin'—wind's just right, an' the tide, too."

We took the hint and got out our fishing tackle. We were in for any kind of sport, and we had to work to make our guide earn his money. Later, we had to admit that Captain Tom knew something about fishing. We anchored in the inlet and chummed for bluefish until we got sore hands. The tide carrying our chum out to sea, attracted literally thousands of big, gamy bluefish our way. We hooked them so fast that, after the first excitement, it seemed more like slaughter than sport. And still they came—hungry, vicious pirates of the sea, ready to snap anything in two that was not made of metal. They literally jumped out of the water and caught porgies and mackerel in their sharp jaws and cut them in two as if clipped by a pair of scissors.

"Ain't they the brutes?" commented our guide. "They just kill for the sake of killin'. But they're mighty good food when you're hungry. Ever cook a bluefish over a seaweed fire? No? Well, let's go ashore, an' I'll show you."

Once more we permitted ourselves to be led by the Captain, and we spent the rest of the day on the beach cooking bluefish, eating them, and trying a pot shot at surf snipe. When night came we were tired enough to smoke a while and then turn in early. In the morning we would go for ducks.

About midnight, it seemed, Captain Tom routed us out. We obeyed, grumblingly, and stowed away a hasty breakfast prepared by him. Then we tumbled into the small boat and rowed away through miles of marshy islands, and finally halted on the banks of a stream. Here we were disposed at various points of advantage. Some stood on shore in a foot of water and others crouched down in the boat.

There was nothing doing! It was so dark that we had to depend upon the imagination for company. The Captain wouldn't let us talk. Then gradually streaks of light shot upward and curved down toward us. The meadows and winding streams began to take form. Little jets of color were added to the white light above, and purples, greens and yellows were mingled in beautiful pictures of flashing rainbows. We were studying the gorgeous dawning of another day when suddenly Captain Tom said:

"Sh-h-h!"

We didn't need this warning to keep still, for we were perfectly silent. However, we watched and waited, with every nerve alert. Then:

"See him?"

"Where? Which way? What?"

Bang! Bang! Both barrels of Captain Tom's gun spoke, and when the noise rolled away he added, in a voice of disgust:

"Why didn't you shoot at 'em? I gave you the first chance."

In a little while we got accustomed to the shadows swooping out of the gray darkness, and we pumped away at every one that appeared. Sometimes the shadows dropped or swerved sideways, but more often they continued straight on their course, except when our guide shot. Then something happened every time.

Duck shooting in the early dusk of morning is exhilarating if you know how to do it, but the best of the sport was over before we really got our hand in. But there were other mornings—bright, cool mornings, when it was a pleasure to exist, and we proved apt pupils. On the third morning we landed so many that the question of slaughter once more arose in our minds to accuse us. So on the fourth morning we decided that we had had enough. We packed up our belongings and motored back to Forked River, where we dropped the Captain and most of the

(Continued on page 326.)

THE MARBLEHEAD 17-FOOT KNOCKABOUTS, A ONE-DESIGN CLASS TO WHICH TWENTY-THREE BOATS WERE BUILT THIS YEAR

The Month in Yachting

'THOUGH the season of 1912 is hardly cold, much talk is in the air of plans for next year, and if half of the new boats materialize, 1913 will see a bigger boom in yachting than has been the case for many years—not forgetting that the season just closed was one of the best, from the standpoint of the sport, in a long time. Of first importance, by reason of their size, is a new one-design class of sloops to be known as the "fifties," and approximately 46 feet on the water, though the final plans have not been worked out as yet. This is about the size of the new M class boats Medora and Dorello; and whether or not the six new boats that have been pledged will be of one design or not, it assures a large class and the best of sport in boats of a size that will give their owners a chance to do practically all of the sailing themselves, without leaving much of it to professional crews, as is the case with any of the larger boats. If it is a one-design class, it will be the largest (in point of size of the boats) that has been raced here since the four 70-footers of 1900. It is said that six members of the New York Yacht Club will build to the class. Geo. F. Baker, Jr., is the prime mover in the formation of the class, and Herreshoff will build the boats.

Another new class that is talked of is a schooner class of approximately 40 feet on the waterline. The owners of the little 30-foot schooners, commonly referred to as the schoonerettes, have expresed themelves as somewhat disappointed in the little craft, by reason of the lack of accommodations, and are planning to go in for a somewhat larger boat of the same rig. To tell the truth, the 30-foot schooners had very little in the way of interior accommodations, on account of the narrow beam, and were not particularly fast by reason of their small sail plan. It seems as if it would have been better to have had a more powerful boat, with at least the room of a New York "thirty," and more sail. Certainly, with the sail plan cut up as it was, 1,000 feet could have been carried as well as 750 feet. The new schooners ought to be a much more sensible craft than the little 30-footers, and should not be too expensive to build and maintain.

START OF A "BANG-AND-GO-BACK" RACE OF THE BOSTON YACHT CLUB

FINISH OF A "BANG-AND-GO-BACK" RACE, SHOWING HOW CLOSELY THE BOATS ARE BUNCHED

Speaking of probable racing for next year brings to mind that, at this writing, Sir Thomas Lipton is again on his way to this country, and there is talk that he has a challenge for the America's Cup in his pocket—*provided* the New York Yacht Club will make certain concessions in the deed of gift referring to the racing rules. It is unlikely that the present holders of the cup will oblige him in this. Sir "Tommy" can have a race at any time he wants it by challenging and giving the waterline length of his boat. He knows this, and it is rumored that he is willing to challenge under these conditions. The question of getting the boat across the Atlantic is not such an insurmountable one, or such a handicap as some would make us believe, as he found out the last two times he raced. Whether or not the type of boat produced under the present deed of gift is a good one is entirely another question, and one that need not bother the Irish baronet, unless he feels that he has a mission to improve the *type* of cup defenders. It is beside the question in point; and anyone can get a race for the cup whenever he wants it.

Next season will also, in all probability, see another international race with the Germans in the *Sonder* class. These races have done much to bring small-boat racing into the limelight, and have had a good effect on the sport, though it must be said that the boats produced under the restrictions have not been of a particularly good type, and there are signs that yachtsmen are tiring of them, both here and abroad. For the same money a much abler and better boat could be built that would give just as keen racing, and the present tendency in yacht design is all away from the flat, shallow shell, with narrow, deep keel and excessive ends. It is said that a number of American *Sonder* boats already built may be disqualified for international racing by reason of being built of lighter material than is stipulated in the German restrictions. If the rule is insisted on, this may bar Harpoon, Beatrice and some of the other Eastern boats.

A new method of racing power boats has been inaugurated by the yacht and power boat clubs on Massachusetts Bay that has resulted in the best of sport for the "monkey-wrench" sailors. The principal drawback to most power boat races lies in the difficulty of handicapping and the lack of interest in the finishes, by reason of the boats being so widely scattered. The new method consists in starting the boats off together—cruisers, big and little, open boats, etc., all in one class—with spark controls and

(Continued on page 324.)

THAT SAILING IS "COMING BACK" AT THE THOUSAND ISLANDS IS SHOWN BY THIS NEW ONE-DESIGN CLASS, 26 FEET LONG OVER ALL

A Fisherman's Protest

By Frederick Arthur Dominy

I've read, 'till I'm plum disgusted,
'Till I'd cuss my own best friend,
'Till my patience is worse than busted,
The tales of some writer men.
When has they ever been afloat?
When did they pull an oar
In a rarin', tearin' fish-boat
Nigh a dozen mile off shore?

I've read, but now I'm a-quittin'
To take my own pen in hand;
I'm goin' to do some writin'
Which I hopes you will understand.
A yarn of my own I'm spinnin'—
I knows it from A to Z—
Smile, but with all your grinnin'
You ain't goin' to flurry me.

I live, an' so does my neighbor,
By work that's work, ye c'n bet.
What we gets we gets by labor
That's hard, an' dirty, an' wet.
When th' win's a howlin' blue blazes,
An' th' sea's running thund'rin' high,
We're off to sea where th' haze is,
Where th' water jes' meets th' sky.

There's fish there, ready for haulin',
An' ashore there's an empty car;
An' what if th' "glass" is fallin',
An' it's gettin' rough on th' bar,
An' th' blue's gone outer th' water,
An' hell's door's a-yawnin' wide?
We stays, as stay we'd oughter,
'Till th' seas slop over the side.

To us, them fish means a livin',
An' it's damn th' man that quits.
We c'n feel th' ol' boat wringin'
From her starn clear to her bitts.
Th' water's sloshin' 'round our feet,
An' our oilers is runnin' brooks,
Th' spray's a-flyin', cold as sleet,
'Fore we're willin' to dry our hooks.

Landin'? Say, did you ever run
On th' beach in a heavy sea?
Course, that's somethin' ye never done,
An' yet you writes about me!
Ever row 'til your back's mos' broke?
'Till th' oar mos' dropped from your hand?
You never tried to keep your stroke
In a fish-boat makin' th' land.

I tell ye, then ye call on God,
An' it ain't no fancy prayer;
You're fighting for life in every rod,
An' your lungs mos' bust for air.
A wave comes right, ye let her go,
An' ye fetch—or you fills an' sink,
Mos' dependin' on how ye row
'Cause it's done in lessen a wink.

Say! Don't ye think I'd oughter know?
Don't ye think I've got it straight?
Me, who's been out in every blow
Since the fall of eighty-eight.
After this, if you're boun' to write
'Bout fishin', an' boats at sea,
'Member ye don't know all—not quite;
Come roun' an' jes' ask for *me!*

Twelve Months in a "Spouter"

How the Pacific Whalers Put in Time Between Seasons by Cruising Among the Sandwich Islands.—Attempts at Escape

By WALTER NOBLE BURNS

II

[FOREWORD.—In the previous instalment Mr. Burns has told how, after shipping as a "green hand" on board the whaling brig Alexander at San Francisco, he became infected with the spirit of discontent which was rife in the forecastle when it was learned that the regular custom on whale ships was to pay the men off at the end of the cruise with "one big iron dollar" each, while the profits of the voyage were divided up among the officers and harpooners. He was contemplating an attempt to escape ashore to the coast of Lower California, more for the adventure of the thing than through any actual sense of injury, when a surreptitious examination of a chart changed his mind by showing that there was no inhabited place within a hundred miles of arid shore. While on the sperm grounds of the Pacific, the second mate, a Cape Verde Island negro, with whom the author had been continually at swords' points, was drowned in the wreckage of a whaleboat which had been knocked to pieces by a maddened bull sperm.]

AT midnight after the burial we raised the volcanic fire of Mauna Loa dead ahead. Next morning we were gliding along the shore of the island of Hawaii with the great burning mountain towering into the sky directly over us and the smoke from the crater swirling down through our rigging. We loafed away three pleasant weeks among the islands. We did not at any time anchor. None of the whaling fleet which meets here every spring ever anchors. The lure of the tropical shores is strong, and there would be many desertions if the ships lay in port. We sailed close to shore in the daytime, often entering Honolulu harbor; but at night we lay off and on, as the sailor term is—that is, we tacked offshore and back again, never venturing closer than two or three miles, a distance the hardiest swimmer bent upon desertion would not be apt to attempt in those shark-haunted waters.

"THE GALE COMPELLED US TO HEAVE TO UNDER STAYSAILS"

Many attempts to escape from vessels of the whaling fleet occur in the islands every year. We heard many yarns of these adventures. A week before we had arrived five sailors had overpowered the night watch aboard their ship and escaped to shore in a whaleboat. They were captured in the hills back of Honolulu and returned to their vessel. This is usually the fate of runaways. A standing reward of $25 a man is offered by whaling ships for the capture and return of deserters; consequently, all the natives of the islands, especially the police, are constantly on the lookout for runaways from whaling crews.

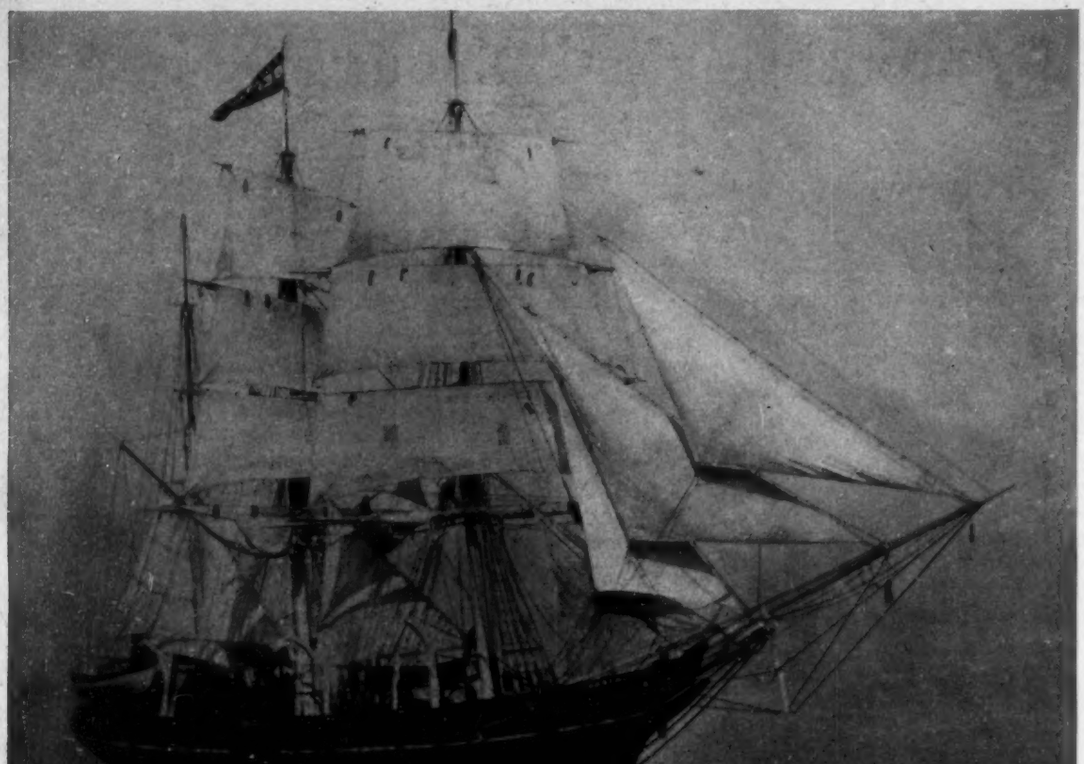
When we drew near the islands the runaway fever became epidemic in the forecastle. Each sailor had his own little scheme for getting away. Big Taylor talked of knocking the officers of the night watch over the head with a belaying-pin and stealing ashore in a boat. Ole Oleson cut up his suit of oilskins and sewed them into airtight bags, with one of which under each arm he proposed to float ashore. Bill White, an Englishman, got possession of a lot of canvas from the cabin, and was busy for days clandestinely making it into a boat, in which he fondly hoped to paddle ashore some fine night in the dark of the moon. "Slim," a tall, lanky Irishman, stuffed half his belongings into his long sea-boots, which he planned to press into service both as carry-alls and life-preservers. Peter Swenson, the forecastle's baby boy, plugged up some big empty oil cans and made life buoys of them by fastening a number of them together.

Just at the time when the forecastle conspiracies were at their height we killed a 13-foot shark off Diamond Head. Our catch was one of a school of thirty or forty monsters that came swarming about the brig, gliding slowly, like gray ghosts, only a few feet below the surface, nosing close to the ship's side for garbage, and turning slightly on their sides to look out of their evil eyes at the sailors peering down upon them over the rail. Big John, the boatsteerer, got out a harpoon, and, standing on the bulwarks, shot the iron up to the wooden shaft into the back of one of the sharks, the spear-point of the weapon passing through the creature and sticking out on the under side. The stout manila hemp attached to the harpoon had been made fast to the fore bitts. It was well that this was so, for the shark plunged and fought with terrific fury, lashing the sea into white froth. But the harpoon had pierced a vital part, and in a little while the great fish ceased its struggles and lay still, belly-up, on the surface.

It was hauled alongside, and, a boat having been lowered, a large patch of the shark's skin was cut off. Then the carcass was set adrift. The skin was as rough as sandpaper. It was cut into small squares, which were used in scouring metal and for all the polishing purposes for which sandpaper serves ashore.

Life aboard the brig seemed less intolerable thereafter, and an essay at escape through waters infested by such great, silent, ravenous sea-wolves seemed a hazard less desirable than before. Taylor talked no more about slugging the night watch. "Slim" unpacked his sea-boots and put his effects back in his chest. Peter threw his plugged oil cans overboard. Bill White turned his canvas boat into curtains for his bunk, and Ole Oleson voiced in the lilting measure of Scandinavia his deep regret that he had cut up a valuable suit of oil skins.

The captain of one of the whaling ships came one afternoon to visit our skipper, and his small boat was left dragging in our wake as the brig skimmed along under short sail. It occurred to me, and at the same time to my two Kanaka shipmates, that here was a fine opportunity to escape. It was coming on dusk, and if we could get into the boat and cut loose we might have a splendid chance to get away. The Kanakas and I climbed over the bow, intending to let ourselves into the sea and drift astern to the boat; but the breeze had freshened and the brig was traveling so fast that we did not believe we could catch the boat, and if we failed to do so the sharks doubtless would have a banquet. So we abandoned the plan after we had remained squatting on the stays over the bow for a half hour considering our chances and getting soaked to the skin from the dashing spray.



WHALING BARK BERTHA STARTING ON A CRUISE

While drifting at the mouth of Honolulu harbor one morning the captain called for a boat's crew to take him ashore. All hands wanted to go. I was one of the lucky ones chosen. The morning was calm and beautiful, the water was smooth, and we pulled away with a will. The city looked inviting at the foot of its green mountains, its quaint houses embowered in tropical foliage. On our starboard beam rose the fine, bold promontory of Diamond Head, and in between the headland and the city lay Waikiki, the fashionable bathing beach. We could see the bathers taking the surf in the bright morning sunlight, while beyond stretched a delectable wooded country, above the tops of whose trees peeped manors and villas of wealthy citizens.

We reached the long pier at last and tied up the boat. While the captain went into the city the sailors remained on the dock in charge of "Long" John, the boatsteerer. Three snaky-eyed Kanaka policemen in blue uniforms hung about, watching our every movement. We were not allowed to stir off the dock. There was a street corner within a stone's throw. A little red brick store stood upon it. A lazy Kanaka lounged against the building smoking a cigarette. That corner fascinated me. If I only could dodge around it! How near it seemed, and yet how unattainable!

But if we sailormen could not get into town we at least had the freedom of the long pier. The pier was several hundred feet long and piled thick with freight of all descriptions, which shut its harbor end from view. With a casual and indifferent air I sauntered out along the pier. In a moment I was hidden behind the merchandise from the unsuspecting "Long" John and the policemen. I soon reached the harbor end. I saw that a sharp curve in the shore line brought the part of the pier on which I was standing close to land. It seemed easy to dive off the pier, swim past a big four-masted English ship unloading alongside, gain the land and escape to the cane fields, which swept up to the edge of the city. I sat down behind some freight and began to take off my shoes. I had one off when a bare-footed Kanaka suddenly stepped into view from behind a pile of bales and boxes. He was tip-toeing and peering about him furtively. I knew him for a spy instantly. Directly he saw me staring at him he looked as guilty as one taken in crime, and slunk away sheepishly. I knew he was on his way to inform on me and made up my mind not to get my clothes wet by any hopeless attempt to run away.

I put my shoe back on and strolled back toward the boat. I saw one of my shipmates named Richard, a deep-water German sailor, who had served in the Kaiser's navy, walking up the gang plank of the English ship alongside the dock. I followed him. When we reached the deck we saw a gang of sailors working about an open hatch.

"Hello, mates," said Richard. "We are merchant seamen and want to clear out from a 'bloody' whaler. Stow us away, won't you?"

The sailors didn't seem to take kindly to the proposition. Perhaps they were afraid of getting into trouble. But they told us we might go down in the forepeak of the ship and stow ourselves away. Richard and I climbed down three decks and found ourselves in the chain lockers, deep in the ship's bow. It was pitch dark down there, and we lay upon the ship's cable in the farthest corners. For three hours we huddled there in silence.

Just when we were beginning to congratulate ourselves that our escape would be successful the hatch was pulled off suddenly and three Kanaka policemen with drawn clubs came leaping down upon us.

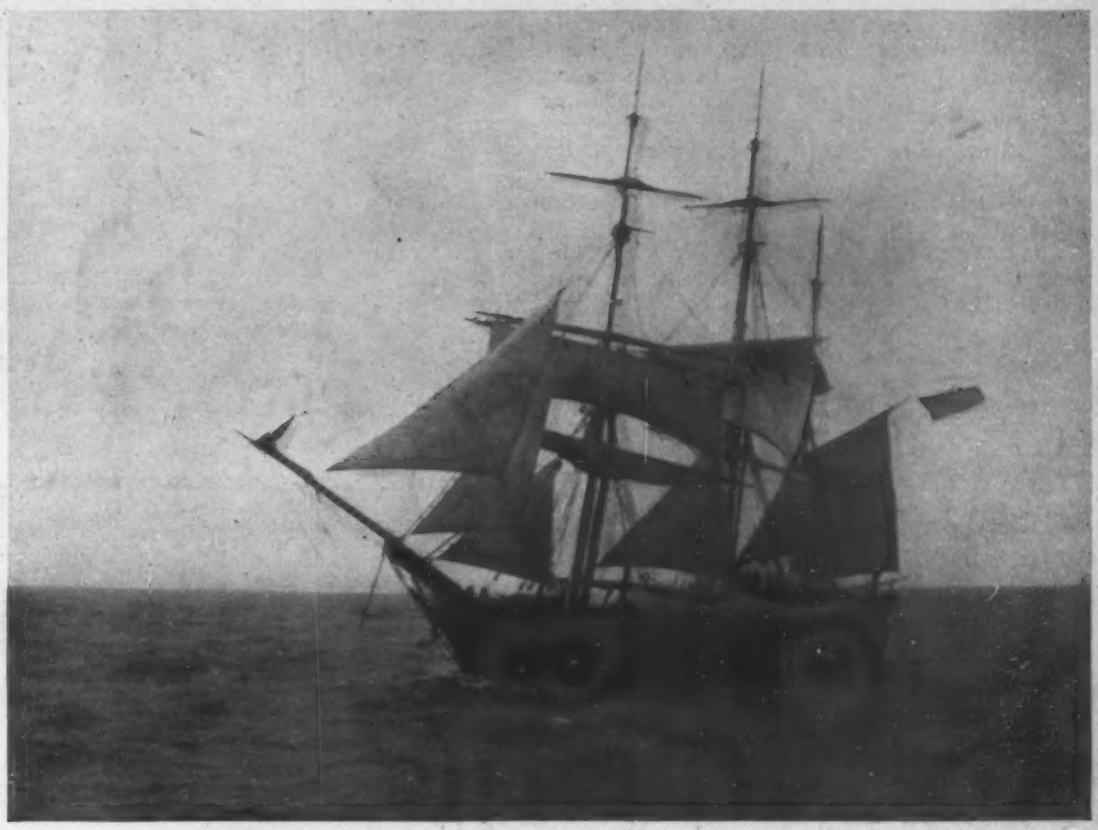
"Come out of this, you!" they yelled, swearing at us and brandishing their billets. The jig was up; resistance would have got us only broken heads. We were led upon deck and escorted towards the gangway for the pier. But I was for one more try before giving up. Suddenly I darted for the rail on the harbor side of the ship. We were in the waist, and the bulwarks reached about to my breast. Before the Kanaka policemen had recovered from their surprise I had plunged head first over the rail and dived into the water, twenty or thirty feet below. When I came to the surface I struck out for shore with all my might. It was only a short swim. I soon made the land and dragged myself, dripping brine, out upon a beach.

I glanced toward the pier. The policemen, with a crowd at their backs, were dashing for me along shore. I started for the cane fields, but in my wet and heavy clothes I stumbled along as if there was lead in my shoes. Perhaps I ran a quarter of a mile. My pursuers gained on me steadily. I was drawing near a cane field, in which I felt I should be able to lose myself; but, before reaching it, my pursuers sprang upon me and bore me to the ground. Then, with a policeman on either side of me, I was marched back to the brig's boat.

The populace had turned out royally in my honor, and I passed through a lane of brown humanity that bent round eyes upon me and chortled and spluttered Kanaka and seemed to get a huge amount of enjoyment out of my capture. As my captors paraded me onto the pier, who should be there waiting for me but Captain

Shorey, our new skipper, just arrived from San Francisco by steamer. He stood with feet wide apart and arms folded on his breast, and looked at me steadily with stern, cold eyes. In my wet clothes I cut a sorry figure. I felt ashamed of myself, and realized that this introduction to my new captain was not all it should have been. Captain Winchester had nothing to say to Richard and me on the long pull back to the brig. Once aboard, he drew a pint of Jamaica rum from his pocket and gave every man of the boat's crew, except us, a swig. But no penalty of any sort was imposed upon us for our escapade. This surprised us.

On a bright sunshiny morning a few days later, with a light breeze just ruffling the harbor, the brig, with its sails laid aback and its head pointed seaward, was drifting with the ebb tide perhaps a mile and a quarter off shore between Honolulu and Diamond Head. Captain Winchester had started for the city in a whaleboat. Those of the sailors left aboard were idling forward. Mr. Landers, the mate, sat by the skylight on the poop reading a magazine. Second Mate Gabriel and the cooper were busy at the carpenter's bench in the waist. No one else was on deck, and I resolved to attempt again to escape. The situation seemed made to order.



AN OLD TIMER, WITH MAIN TOPSAILS BACKED, THAT WAS SPOKEN IN BEHRING SEA

Mr. Landers was an old man, and in the warm weather of the tropics, when there was nothing doing on board, I often had seen him sit and read by the hour without looking up. I hoped that this morning his magazine would prove of absorbing interest. Gabriel and the cooper were intent upon their work. As for the sailors, I told them that I would try to swim ashore, and if I were discovered and they had to lower for me, I asked them to hurry as little as possible, so that I might have every chance to get away.

For my adventure I wore a blue flannel shirt, dungaree trousers and my blue cap. I tied my shoes together with a rope yarn, which I slipped baldric-fashion over my shoulders. In the belt at my waist I carried a sailor's sheath knife. With this I had a foolish idea that I might defend myself against sharks. Without attracting attention, I slipped over the bow, climbed down by the bobstays and let myself into the sea. I let myself wash silently astern past the ship's side and struck out for shore, swimming on my side without splash or noise and looking back to watch developments aboard.

I am convinced to this day that if I had not been in the water old Landers would have kept his nose in that magazine for an hour or so and drowsed and nodded over it as I had seen him do dozens of times before. Either my good angel, fearful of the sharks, or my evil genius, malignantly bent upon thwarting me, must have poked the old fellow in the ribs. At any rate, he rose from his chair and stepped to the taffrail with a pair of binoculars in his hand. He placed the glasses to his eyes and squinted toward the pier to see whether or not the captain had reached shore. I don't know whether he saw the captain or not, but he saw me.

"Who's that overboard?" he shouted.

I did not answer. Then he recognized me.

"Hey, you," he cried, calling me by name, "come back here!"

I kept on swimming.

"Lay aft here, a boat's crew!" Mr. Landers sang out.

Gabriel and the cooper ran to the quarterdeck and stared at me. The sailors came lounging aft along the rail. Mr. Landers and Gabriel threw the boat's falls from the davit posts. The sailors strung out across the deck to lower the boat.

"Lower away!" shouted Mr. Landers.

One end of the boat went down rapidly. The other end jerked and lurched and seemed to remain almost stationary. I wondered whether my shipmates were bungling purposely. Mr. Landers and Gabriel sprang among them, brushed them aside and lowered the boat themselves. A crew clambered down the brig's side into the boat. Gabriel went as boat-header. The second mate was a Portuguese negro. In a jiffy the sweeps were shot into place, the boat was shoved off, and, with Gabriel at the tiller, the chase was on.

All this had taken time. As the ship was drifting one way and I was quartering off in almost an opposite direction, I must have been nearly a half mile from the vessel when Gabriel started to run me down.

I swam on my side with a long, strong stroke that fast swimmers used to fancy before the Australian crawl came into racing vogue. I was swimming as I never in my life swam before—swimming for liberty. All my hope and heart, as well as all my strength, lay in every stroke. The clear warm salt water creamed about my head and sometimes over it. I was making time. Swimming on my side, I could see everything that was happening behind me. As the boat came after me, I noticed there was but a slight ripple of white water about its prow. Plainly she was not making great speed.

"Pull away, my boys! We ketch dat feller," sang out Gabriel.

Wilson, at the 'midship oar, "caught a crab." He tumbled over backwards, his feet kicking in the air. Wilson was a good oarsman. He was my friend. A hundred yards more and Walker, at the tub oar, did the same. He also was my friend.

The boys were doing their best to help me out—to give me a chance. I knew it. Gabriel knew it, too. The crafty old negro recognized the crisis. I could not hear what he said or see all that he did. The boys told me about it afterwards. It must have been a pretty bit of acting.

Suddenly Gabriel half rose from his seat and peered anxiously ahead.

"My God!" he cried, "dat poor feller, he drown! Pull, my boys! Oh, good God!"

The sailors at the sweeps had their backs to me. It was a good, long swim, and the water was full of sharks. It was not difficult to make them believe that I was verging on tragedy.

"Dere he go down!" Gabriel's voice was broken and sobbing. "He t'row his hands up! He underneath de water! I caint see him! Oh, dat poor feller! No; dere he come up again! Oh, good Lord! Pull away, my bully boys; pull away! We save him yet."

Surely the stage lost a star when Gabriel became a whaler. The old Thespian was good—he was great. His acting carried conviction. The sailors believed I was drowning. They leaned upon their oars with a will. The sweeps bent beneath the powerful strokes. The boat jumped through the water. I noted the increased speed by the white spray that began to stand at the bow. Gabriel helped along the speed by forward lurches of his body, pushing at the same time upon the stroke oar. All the while he kept shouting:

"We save him yet, dat poor feller! Pull away, my boys!"

The boat came up rapidly. In a little while it was almost upon me. I tried to dodge it by darting off at right angles. It was no use—Gabriel slewed his tiller and the boat came swishing round upon me. I had played the game out to the last, and I was beaten—that was all. I caught the gunwale near the bow and pulled myself into the boat.

"You make dam good swim, my boy," said old Gabriel, smiling at me, as he brought the boat around and headed back for the ship.

I had made a good swim. I was fully a mile from the ship. I was not much over a half mile from shore. I looked across the sunlit, dancing blue water to the land. How easy it would have been to swim it! How easy it would have been after I had crawled out upon the sands to hide in the near-by mountains and live on wild fruit until the ship started for the north and all danger of capture was past!

When I reached the brig Mr. Landers permitted me to put on dry clothing and then put me in irons, as the sea phrase runs. This consisted of fastening my hands together in front of me with a pair of steel handcuffs of the ordinary kind used by sheriffs and policemen everywhere. Then he made me sit on the main hatch until Captain Winchester came back from Honolulu, along toward sundown.

"What's the matter with that man?" roared the captain, as he swung over the rail and his eyes lighted on me.

"He jumped overboard and tried to swim ashore," said Mr. Landers, in his nasal, Cape Cod drawl.

"Why didn't you get my Winchester rifle and shoot him?" thundered the captain.

"Well," returned Mr. Landers, "I don't shoot folks."

After supper the captain stuck his head out of the cabin gangway.

"Come down here, you," he said. I stepped into the cabin, now bright with lighted lamps. The captain glared at me savagely.

"You want to give me a bad name with Captain Shorey when he takes command, do you?" he shouted. "You want to make it appear I have been hard on my men—eh? You think you're a smart sea-lawyer, but I'll teach you the bitterest lesson you ever learned. We are bound for the Arctic Ocean. There are no ships up there but whale ships, and we do as we please. I have been sailing to the Arctic for thirteen years as master and mate of whale ships, and I know just how far I can go in dealing with a man without making myself liable to law. I am going to make it as rough for you as I know how to make it. I will put you over the jumps right. I will punish you to the limit. This ship is going to be a floating hell for you for the rest of the voyage. And when we get back to San Francisco you can prosecute me all you please."

He drew a key from his pocket and unlocked one manacle. It dropped from one wrist and dangled from the other.

"Boy," he said to the Kanaka cabin boy, who had been listening with open mouth and bulging eyes to this tirade, "get this man a cup of water and a biscuit."

I had had nothing to eat since breakfast, and I sat down at the cabin table and ate my one hardtack and drank my quart tin of water with a relish. After my meal, the captain fastened my handcuff again and jerked a little hatch out of the floor.

"Get down there," he said.

I climbed down, and he clapped the hatch on again. I was in darkness, except for the light that filtered from the cabin lamps through the four cracks of the hatch. When my eyes had become accustomed to the dimness, I made out that I was in the ship's run, where the provisions for the captain's table were stored. I rummaged about as well as I could in my handcuffs and found a sack of raisins open and a box of soda crackers. To these I helped myself generously. From a forecastle viewpoint, they were rare dainties, and I filled my empty stomach with them. I had not tasted anything as good since I had my last piece of pie ashore. Pie! Dear me! One doesn't know how good it is—just common pie baked in a bakery and sold at the corner grocery—until one cannot get it and has had nothing but salt horse and cracker hash for months. I used to yearn for pie by day and dream of pie by night. At bed time the captain snatched the hatch off again and tossed me down my blankets. I bundled up in them as best I could and slept with my manacles on.

I was kept in irons, on bread and water, for five days and nights. Sometimes in the day time, with one handcuff unlocked and hanging from my other wrist, I was put at slushing down the main boom or washing paint-work. But, for the most part, I was held a close prisoner in the run, being called to the cabin table three times a day for my bread and water. Finally, when Captain Shorey came aboard and assumed command and the vessel headed for the north, I was released and sent to the forecastle. My shipmates proved Job's comforters, and were filled with gloomy predictions regarding my future.

"I pity you from now on," each one said.

But their prophecies proved false. After Captain Shorey took charge of the ship, Captain Winchester became mate. As mate, he was, as may be said, the ship's foreman, directing the work of the men, and was in much more intimate contact with the sailors than when he had been skipper. In his new capacity he had much more opportunity to make it unpleasant for me in a thousand ways. But, for some reason or other, he never made good that fierce little speech he had delivered to me in the cabin.

When other green hands bungled, he damned them in round terms for their awkwardness. When I blundered, he showed me how to correct my error. "Not that way, my boy," he would say. "Do it this way." When I took my trick at the wheel, he would sometimes spin a yarn or crack a joke with me. He loaned me books from time to time. In the Behring Sea, when he got out his rifle and shot *okchug* seals, as they lay basking on cakes of ice, he almost invariably took me with him in the boat to bring back the kill. In short, he treated me more considerately than he treated any other man in the forecastle, and before the voyage was over we had become fast friends.

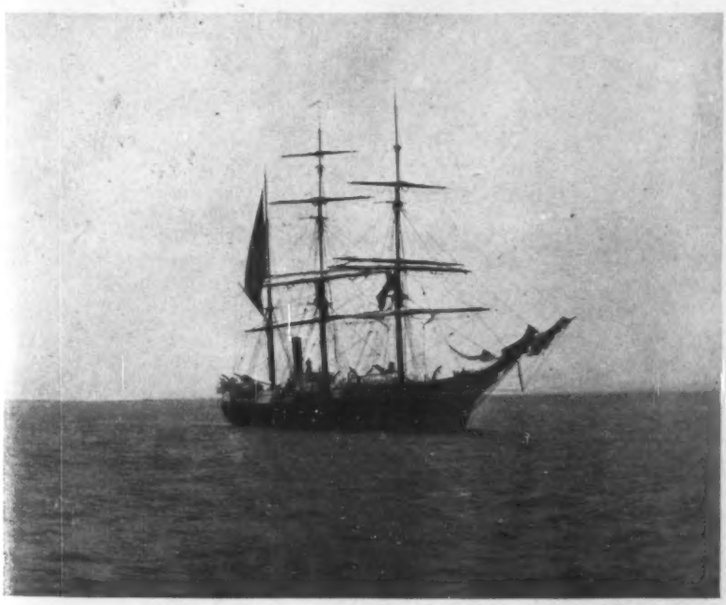
Before leaving the island we shipped a Portuguese negro boatsteerer to take the place of the Night King. He was coal black, had a wild roll to his eyes, an explosive, spluttering way of talking, looked strikingly like a great ape, and had little more than simian intelligence. His feet had the reputation of being the largest feet in the islands. When I had seen them I was prepared to believe they were the largest in the world. He was dubbed "Big Foot" Louis as soon as he came aboard, and the title

stuck to him during the voyage. He came aboard barefooted. I don't know whether he could find any shoes in the Hawaiian Islands large enough to fit him or not. Anyway, he didn't need shoes in the tropics.

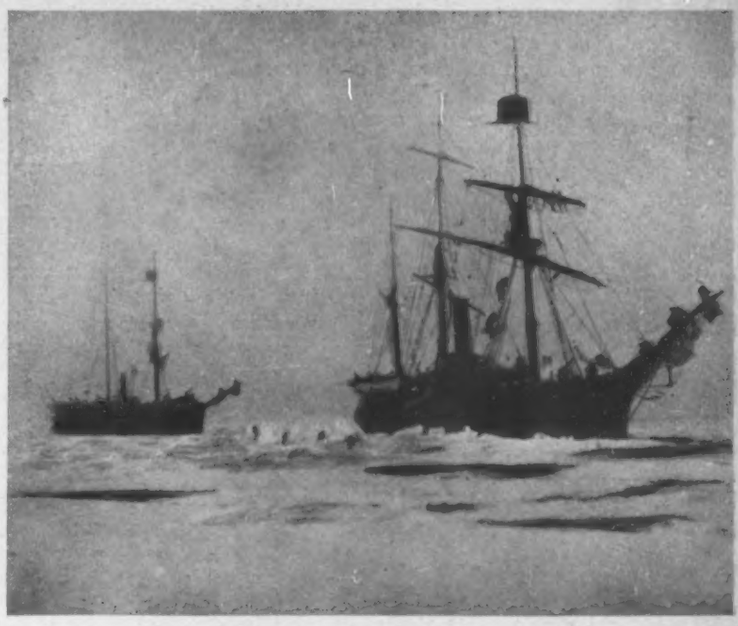
When we began to get north into cold weather he needed shoes badly, and there were none on board large enough for him to get his toes in. The captain went through his stock of Eskimo boots, made of walrus hide and very elastic, but they were all too small. When we entered the region of snow, Louis was still running about the deck barefooted. As a last resort, he sewed himself a pair of canvas shoes—regular meal sacks—and wore them through snow and blizzard and during the cold season when we were in the grip of the Behring Sea ice pack. Up around Behring Straits the captain hired an Eskimo to make a pair of walrus hide boots big enough for Louis to wear. Louis wore them until we got back to San Francisco and went ashore in them. I met him wandering along Pacific street in his walrus hides. However, he soon found a pair of brogans which he could wear with more or less comfort.

One night, while I was knocking about the Barbary Coast with my shipmates, we heard dance music and the sound of revelry coming from behind the swinging doors of the Bow Bells saloon, a free-and-easy resort. We stepped inside. Waltzing around the room with the grace of a young bowhead out of water was Big-Foot Louis, his arm around the waist of a buxom negress, and on his feet nothing but a pair of red socks. We wondered what had become of his shoes, and spied them sitting on the piano, which the "professor" was vigorously strumming. Louis seemed to be having more fun than anybody, and was perfectly oblivious to the titters of the crowd and to the fact that it was not *de rigueur* on the Barbary Coast to dance in one's socks.

We left the Hawaiian Islands late in March, and, standing straight north, soon left the tropics behind, never to see them again on the voyage. As we plunged into the "roaring forties," we struck our first violent storm. The fury of the gale compelled us to heave-to under staysails and drift, lying in the troughs of the seas and riding the waves sidewise. The storm was, to me, a revelation of what an ocean gale could be. Old sailors declared they never had seen anything worse. The wind shrieked and whistled in the rigging like a banshee. It was impossible to hear ordinary talk, and the men had to yell into each other's ears. We put out oil bags along the weather side to keep the waves from breaking. But, despite the oil that spread from them over the water, giant seas frequently broke over the brig. One crushed the waist boat into kindling wood and sent its fragments flying



A MODERN ARCTIC STEAM WHALER



WHALERS CAUGHT IN THE ICE IN BEHRING STRAIT

all over the deck. Waves sometimes filled the ship to the top of the bulwarks, and the sailors waded about up to their breasts in brine until the roll of the vessel spilled the water overboard or it ran back into the sea through the scuppers or hawse-holes.

The waves ran as high as the topsail yard. They would pile up to windward of us, gaining height and volume until we had to look up almost vertically to see the tops. Just as a giant comber seemed ready to break in roaring foam and curl over and engulf us, the staunch little brig would slip up the slope of water and ride over the summit in safety. Then the sea would shoot out on the other side of the vessel with a deafening hiss, like that of a thousand serpents, and rush skyward again, the wall of water streaked and shot with foam and looking like a polished mass of jade or agate.

I had not imagined water could assume such wild and appalling shapes. Those monster waves seemed replete with malignant life, roaring out their hatred of us and watching alertly with their devilish foam-eyes for a chance to leap upon us and crush us or sweep us to death.

I became genuinely seasick now for the first time. A little touch of sea-sickness I had experienced in the tropics was as nothing. To the rail I went, time and again, to give up everything within me, except my immortal soul, to the mad gods of sea. For two days I lay in my bunk. I tried pickles, fat bacon, everything that any sailor recommended—all to no purpose. I would have given all I possessed for one fleeting moment upon something level and still, something that did not plunge and lurch and roll from side to side, and rise and fall. I think the most wretched part of seasickness is the knowledge that you cannot run away from it, that you are penned in with it; that, go where you will, on the royal yard or in the bilge, you cannot escape the ghastly nightmare, even for a minute.

There is no use fighting it, and no use dosing yourself with medicines or pickles or lemons or fat meat. Nothing can cure it. In spite of everything, it will stay with you until it has worked its will to the uttermost, and then it will go away at last of its own accord, leaving you a wan, limp wreck. I may add, to correct a general impression, that it is impossible to become seasoned to seasickness. One attack does not render the victim immune from future recurrences. I was very sick once again on the voyage. After a season ashore, the best sailors are liable to seasickness, especially if they encounter rough weather soon after leaving port. Some time later we were frozen solidly in Behring Sea for three weeks. When a storm swell from the

south broke up the ice and the motionless brig began suddenly to rock and toss on a heavy sea, every mother's son aboard, including men who had been to sea all their lives, was sick. Not one escaped.

During the storm we kept a man at the wheel and another on the try-works as a lookout. One morning during my trick at the wheel, I was probably responsible for a serious accident, though it might have happened with the most experienced man at the helm. To keep the brig in the trough of the seas, I was holding her on a certain point of the compass, but the big waves buffeted the vessel about with such violence that my task was difficult. Captain Shorey was standing within arm's length of me watching the compass. A sea shoved the brig's head to starboard, and, as if it had been lying in ambush for just such an opportunity, a giant comber came curling in high over the stern. It smashed me into the wheel, and for an instant I was buried under twenty feet of crystal water that made a green twilight all about me. Then the wave crashed down ponderously upon the deck and I was standing in clear air again.

To my astonishment, the captain was no longer beside me. I thought he had been washed overboard. The wave had lifted him upon its top, swept him high over the skylight the entire length of the quarterdeck and dropped him on the main deck in the waist. His right leg was broken below the knee. Sailors and boat-steerers carried him into the cabin, where Mr. Winchester set the broken bones. We put into Unalaska a week later, where the surgeon of the revenue cutter Bear reset the leg. This was in the last days of March. The captain was on crutches in July, when we caught our first whale.

(To be continued.)

The Theory of Sail Trimming

By PETER JENNESS

EVERYONE who sails a boat is more or less interested in the trimming of sails, and is constantly striving, if he is a good sailorman, to get the greatest driving power from them. One learns by experience only, the best way to trim sails on his own particular boat to get the greatest good from them, and, outside of a few general rules, he cannot be "book taught" on this subject. Indeed, no precise rules can be laid down, as the shape of the hull has much to do with the trim of the sails, and one who has been used to sailing a flat boat will find a great difference in the trimming of the sails when he sails on a sharp, deep boat. The proper trim is made instinctively by the good sailor, but few take the trouble to find out why they trim their sails differently under different conditions. It is sufficient for them to know what to do and when to do it.

Yet there must be some theoretical rules governing the whole matter of trim, and it is conceivable that an understanding of these rules might give a man a better insight into the matter of trim, so as to get the greatest possible good from his sails. It certainly would make an interesting study for the sailor that likes something more than "rule-of-thumb" methods. I found it so, and was surprised when I came to look into the matter to find how little has been written on this subject. In the following short article I have given the theoretical reasons for the trim of sails in the three different positions of sailing—on the wind, reaching and running. It has been necessary in doing this to use a few formulæ, but these need not scare the man who has left geometry many years behind him, and are easily followed by reference to the figures given.

When headed as close into the wind as possible, or "full and by," the practice of just keeping the luff of the sail from lifting is a good general one. But, as will be seen later, the advantage depends a good deal on the cut of the sail.

Sails are not perfect planes, as theory would have them; first, because it is a practical impossibility to set the canvas so; and, secondly, practice has proved that a sail with a draft or a certain amount of fullness is particularly advantageous in light airs. Then the matter of strength comes in also, and a bit of draft helps tremendously to keep the sail together and do its work without ripping. It follows mathematically:

That a sail, to draw to the best advantage, should be set so that the angle it makes with the center line of the ship is one-half the angle the apparent wind makes with the course.

The apparent wind is the resultant of the true wind and the speed of the vessel. That is, a vessel going into the wind at a certain speed causes the wind to strike the sail at a different angle than if the boat were standing still. We want to find, first, the direction and velocity of this apparent wind.

Refer to Fig. 1, and let us assume the velocity of the true wind to be 20 miles per hour, and the direction 60° on the port bow, and the speed of the vessel one-third the velocity of the wind, or nearly 7 miles per hour.

To find the velocity and direction of the apparent wind:

Fig. I.—"o b" = 20 = velocity of true wind.

—"o d" = $\frac{1}{3}$ o b = 6.66 = speed of vessel.

From "B" draw "b c," equal and parallel to "o d." Draw "o c," and by the parallelogram of forces it will represent the direction and velocity of the apparent wind.

By assumption: o b = 20; o d = b c = $\frac{20}{3}$ = 6.66; $\angle$ a o b = 90° — 60° = 30°.

Then by trigonometry: a b = sin $\angle$ a o b × b o = 10; a o = b o × Cos $\angle$ a o b = 17.3. And tan $\angle$ a o c = $\frac{a\,b + b\,c}{a\,o}$ = .963. And $\angle$ a o c = 43° 55′; c o = $\frac{a\,o}{\cos \angle\ a\,o\,c}$ = 24.

The angle of course with apparent wind ($\angle$ c o d) is 90° — $\angle$ a o c, or 46° 5′. The velocity of apparent wind (o c) is 24 miles per hour.

Having the direction and velocity of the apparent wind to find the angle of sails with course.

Fig. II.—Velocity of apparent wind, 24 miles per hour, and direction, 46° 5′ on the port bow (as per problem I). Draw c o = 24 = direction and velocity of apparent wind. And $\angle$ c o f = 46° 5′ = $\angle$ of apparent wind and course.

Draw d o (the sail line), making $\angle$ d o a = ½ $\angle$ c o f = 23° 2½′.

From "c" draw "c b" parallel to "d o"; from "o" draw "o b" perpendicular to "d o"; from "b" draw "b a" perpendicular to "o f."

Then by the parallelogram of forces, "b a" represents the force of the wind causing leeway and "a o" the force driving the vessel ahead.

By geometry: $\angle$ a o d = $\angle$ a b o = ½ $\angle$ c o f = d o e = $\angle$ b c o = 23° 2½′.

And b a = c o (sin $\angle$ b c o × cos $\angle$ a b o) = 24 (sin 23° 2½′). (cos 23° 2½′) = 8.65 leeway component.

a o = c o (sin $\angle$ b o c × sin $\angle$ a b o) = 24 (sin 23° 2½′). (sin 23° 2½′) = 3.67 propulsive component.

Fig. III represents the same problem with the apparent wind abaft the beam. The lettering is the same as in Fig. II, and the velocity of the apparent wind is assumed the same (24 miles per hour), but making an angle of 120° with the course.

Fig. I

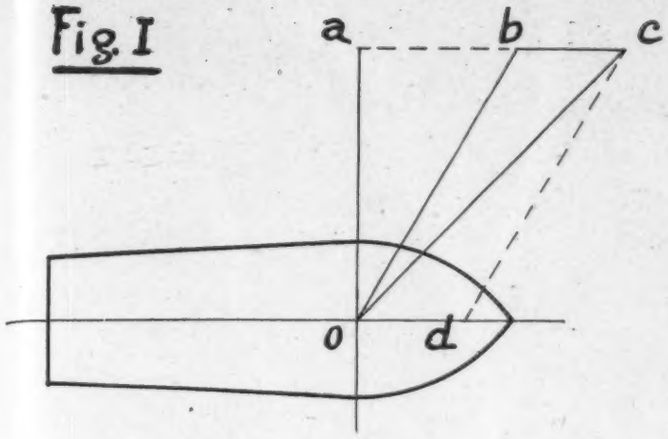


Fig. II

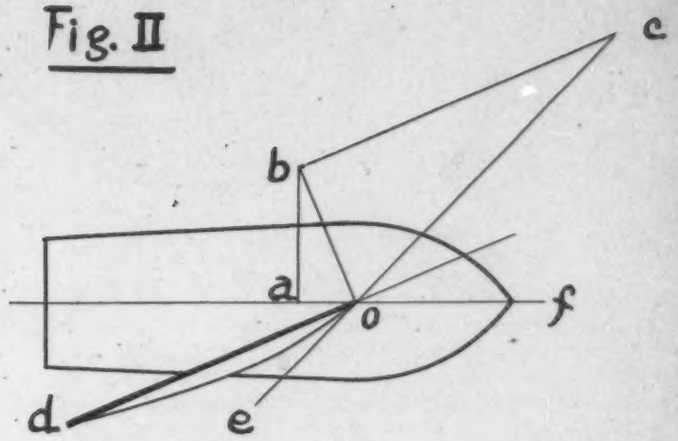


Fig. III

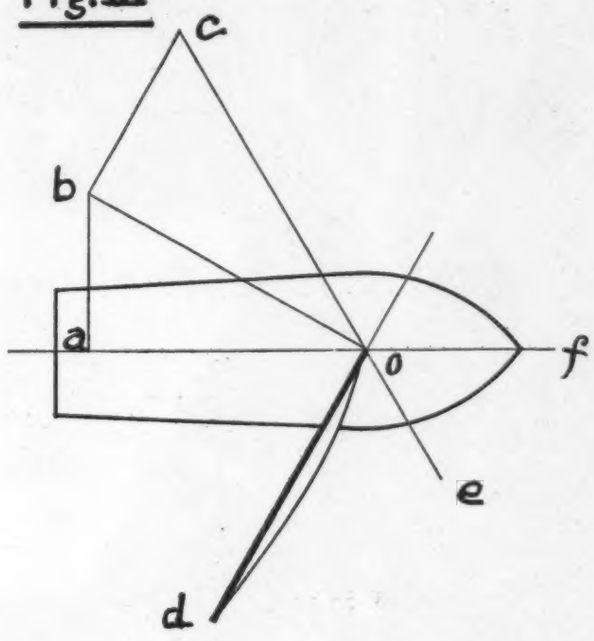
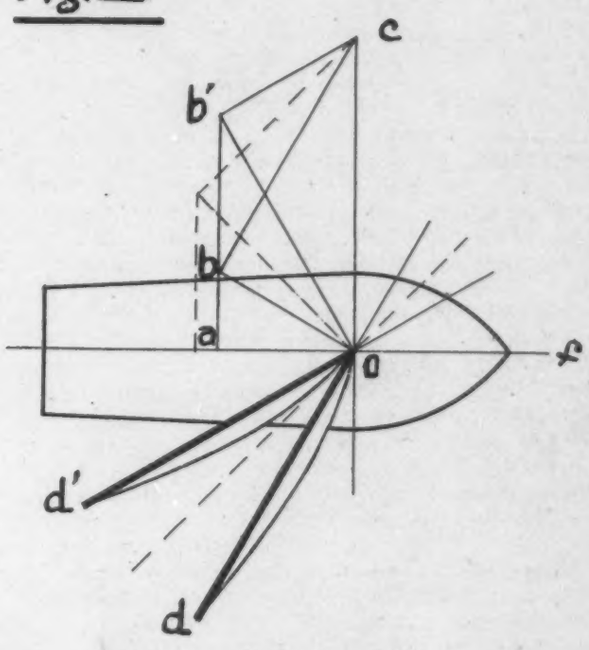


Fig. IV



Then, c o = 24 miles per hour, and angle c o f = 120°.

As in Fig. II, ∠ a o d = ∠ a b o = ½ ∠ c o f = ∠ ½ d o c = ∠ b c o = 60°; and

b a = c o (sin ∠ b c o × cos ∠ a b o) = 24 (sin 60° × cos 60°) = 10.4 = leeway component.

a o = c o (sin ∠ b c o × sin ∠ a b o) = 24 (sin 60° × sin 60°) = 18 = propulsive component.

The direction of the wind in relation to the course of the vessel, and the speed, remaining the same, it will be found that any other set of the sails will diminish the propelling component.

The sail should be too slack rather than trimmed too close. It can be trimmed either way and show the same driving component, but the force causing leeway increases rapidly as the sail is trimmed in. This is shown graphically in Fig. IV.

Fig IV.—The lettering is the same as Figs. II and III, and the same formula applies. The broken lines are the theoretically correct ones for this figure.

It will also be found (other conditions remaining the same) that the driving power of the sails increases as the speed of the vessel falls off, and the sheets are slackened accordingly, until the vessel is standing still and getting the full force of the true wind.

For instance, in the case of a vessel taking another in tow: To do so to best advantage the sheets will have to be eased as her speed lessens, due to the extra load, and the apparent wind comes further aft.

The reverse is the case of a vessel sailing and then having her auxiliary power started. The engine will increase her speed, and the apparent wind will draw ahead, so that the sails will have to be trimmed in to keep them pulling.

Professor Rankine, in his "Ship Building, Theoretical and Practical," says: "The greatest forward effort on a given sail for a given apparent direction of the wind takes place when the sail is so braced that the tangent of the angle which it makes with the apparent wind is double that of the tangent of the angle which it makes with the ship's course." (This has been quoted by a number of authorities, but not always correctly.)

This is an approximation, and no doubt a very good one in practice, as it allows 13½° for leeway and other imperfections with a four-point breeze; 18° with six points of wind; 18° with the wind abeam; 18° with the wind two points abaft; 13½° with the wind four points abaft; 7½° with the wind six points abaft, and no allowance at all with the wind dead aft.

The relative figures are confirmed almost perfectly by the theoretical leeway components, but the angles appear large for present-day vessels.

It must always be kept in mind that a boat's course is not the direction of her keel, and that the angle the boom makes with the amidships line is not the same as the angle of the gaff.

As I said before, all of the above is carried out instinctively by a good sailor, but without his knowing the reason why.

The Cape Cod Canal

Some First-Hand Information as to What Has Been Done and How the Work is Progressing. Of Great Value to the Small Boat Sailors

By F. R. WATERMAN

EVERY yachtsman, and especially every motor boat man, is particularly interested in the new canal across Cape Cod, connecting Buzzard's Bay with Cape Cod Bay. The completion of this inland waterway will mean much to the small-boat sailor, and will make the cruise to the New England coast a much shorter and safer trip than at present. The work has been going on for some years, yet very little actual information has been given out concerning its progress, and the average man hardly knows whether it will be one year or ten before the waterway will be open to navigation.

It was a desire to find out what the actual conditions were, and to see for myself just how the canal was progressing, that led me to take a cruise there this summer in my 27-foot power boat, starting from Boston Bay.

The cruise proved not only enjoyable, but most interesting and enlightening, though, as far as the latter went, I had to hunt for all I picked up, as absolutely every bit of information about the work that has been done and was to be done was refused me by the construction company working on the canal. I had expected that they would be glad to give out accurate information, as is the rule with any large contractor who is doing work of a more or less public nature which will be of benefit to commerce. What information I did get was from personal observation and from reliable sources along the route, while my camera caught many photographs showing the work that had been done and that in actual progress.

As everyone knows, the prime purpose of the canal is to shorten the route from New York to Boston, and to save the long and, in winter time, dangerous trip around Cape Cod and over the treacherous Nantucket Shoals, with their narrow channels and strong cross-tides. The saving in miles is from 55 to 70, and while, of course, this alone is worth saving, it is the elimination of delays, due to bad weather, fog, etc., that is an even more important item to commerce.

The canal runs from the little town of Buzzard's Bay through to Sagamore, on Cape Cod Bay, from which place the run to Boston is some 50 miles.

Mr. Calvin Austin, president and general manager of the Eastern Steamship Company, has stated, in speaking of the canal, that the canal company is figuring on about 500,000 passengers passing through the canal annually, and that there is now about 25,000,000 tons of freight passing around Cape Cod each year which could profitably use the new waterway. It is on these figures that the financial success of the enterprise is based. When the canal is completed, the company intends to build large docks and wharves at the Buzzard's Bay terminal for passenger traffic to Cape Cod and Southeastern New England.

A canal across Cape Cod has long been talked of, and it is interesting to glance briefly at what has been done toward that end in the past. To go back as far as 1627 to 1630, there is on record correspondence between a man in Boston and one in Sandwich about a waterway across the Cape following practically the same route as the present one, except that it was to come out at the town of Sandwich. At that time the Pilgrims used to sail with their goods up the Monument River as far as possible, where they would land them and carry them overland to where they could be loaded on boats on Cape Cod Bay. At the opening of the Revolution, in 1776, General Washington had engineers on the Cape surveying for a canal, but as his other campaigning required the use of these engineers, they were recalled, and nothing further was done at that time.

About 1870 some enterprising promoter or speculator started in to dig the canal with some Italians and a few wheelbarrows. A small hole in the ground still marks the result of his labors. In 1883 another individual started in to dig the canal. He built an endless bucket dredge on the sands of Sandwich and began to eat his way across, but after he had chewed out about one and three-quarter miles he found it was more than he could digest, and finally gave it up. Then along came the Cape Cod Canal Company, financed by Mr. August Belmont. They began work on June 22, 1909, when the first shovelful was turned in Bournedale, and up to June 1 of this year some 7,000,000 cubic yards of sand have been dug; so that, after all these years of failure, it seems as if the work would at last be accomplished.

There will be no locks in the canal, as it will be a tidal waterway, through which it is estimated that there will be a current of

THE CANAL JUST ABOVE SAGAMORE BRIDGE. A SHOWS THE BRIDGE; B, DREDGE AT WORK; CC, COLUMNS FOR THE NEW BRIDGE

EASTERN END OF THE CANAL LOOKING TOWARD CAPE COD BAY. A, COALING STATION; B, SCOW PILING RIP RAP ALONG THE BANKS

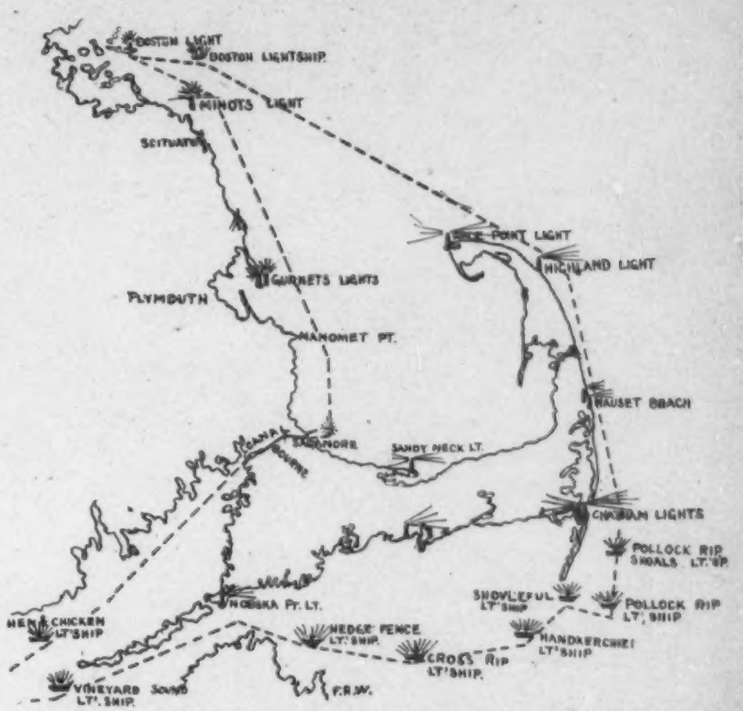
about four miles per hour. The length of the canal from Cape Cod Bay to Buzzard's Bay is 8 miles, while at the Buzzard's Bay end the approaching channel runs out into the bay for some 3 miles. At the Cape Cod end there will be a rip-rap granite breakwater, 3,000 feet long, 50 feet deep and 25 feet wide, to protect the entrance, on account of its exposed position and shifting sands. This breakwater is already finished. Practically the whole length of the canal runs through the town of Bourne, with the exception of about a mile at the eastern end, which is in the town of Sandwich.

There was a great deal of preliminary work to be done in connection with the canal besides the mere digging. Roadways had to be removed, railways and right-of-ways changed, new bridges to be built, etc. There were two cemeteries to be removed, in one of which considerable delay was experienced in getting the consent of one man to the removal of a body.

From Boston to the entrance of the canal the course takes one past Boston Light, by Minots, thence past Scituate, Brant Rock, Gurnet Lights, off Plymouth, and Manomet Point to the breakwater off the town of Sagamore, a run which we made in our motor boat between 5 a. m. and 12:25 p. m.—a little over seven hours. There are numerous harbors on the way, giving complete shelter for small boats. The entrance from the sea is at present hard to locate, as from a distance the breakwater merges with the sandy background and is almost invisible, while no town is to be seen from the sea, on account of the hills near the water. The best landmarks we could find were the two tall stacks of the Keith Car Works, at Sagamore.

Once around the breakwater, the entrance to the canal is seen. A narrow channel has been dredged from near the entrance of the canal to the town of Sandwich, and good depth of water can be had. Just beyond this channel, on the main canal, is a coaling station with a wharf and huge piles of soft coal. Beyond the coaling station, on the right bank, a large barge is working, dumping small granite stones along the banks. Both banks of the canal will probably have to be lined with these stones for their entire length to prevent the loose sand, through which the canal is cut, washing back into the channel. The canal is said to be 250 feet wide, but I couldn't see it. I was told that this width was to be only at certain passing points. The depth of the canal, when finished, will be 25 feet, and in all probability will be dredged to 30 feet at a later date.

Beyond the coaling station is an old wooden drawbridge, called the Sagamore Bridge, which is shown on one of the photographs. This is only a temporary bridge, as the construction company is laying the foundation for a large steel drawbridge with a 160-foot span. This is at the village of Sagamore, where the Keith Car Works—the largest in New England—are located. At this point the Canal Company have placed a new $250,-



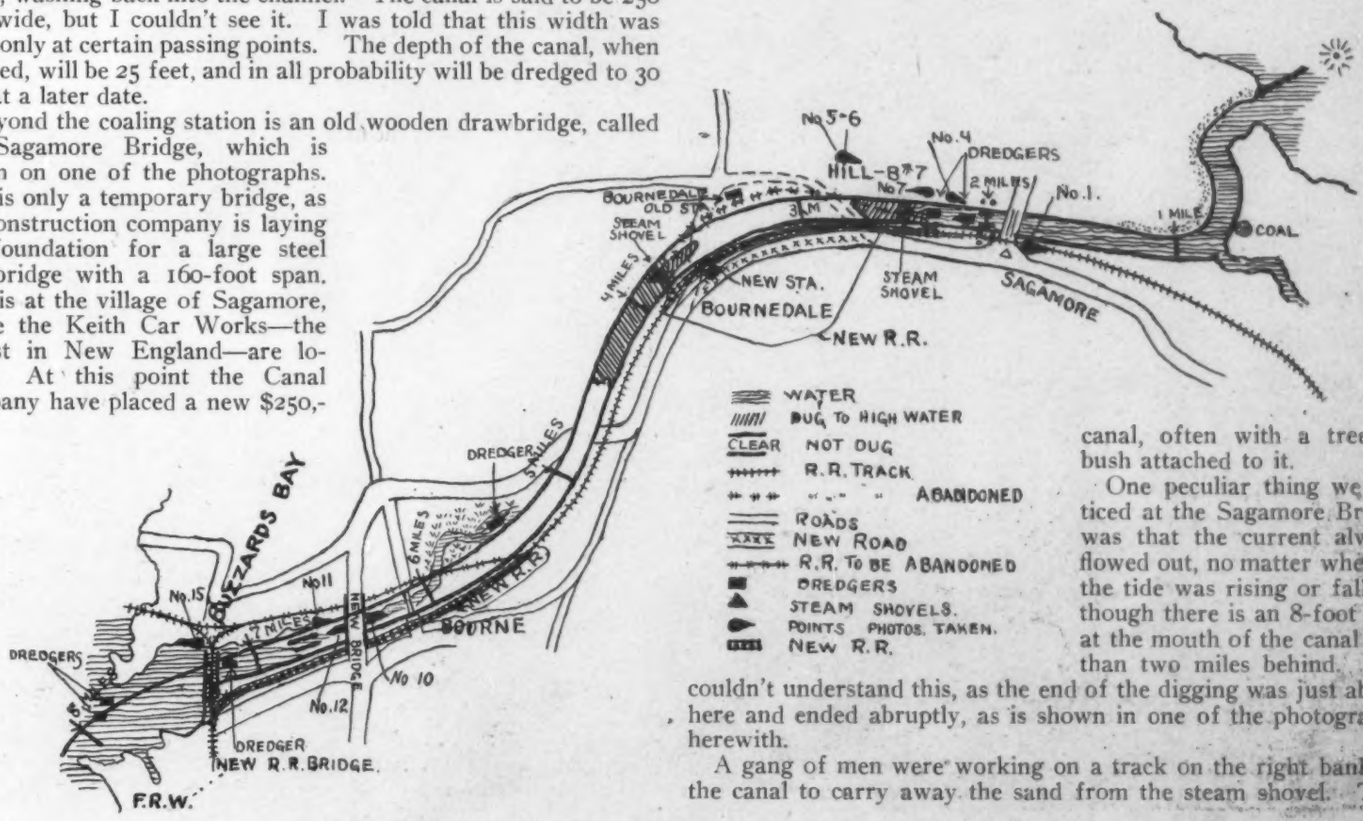
THE NEW ROUTE MADE POSSIBLE BY THE CANAL

000 scoop dredge at work. This is a large, powerful-looking dredge, with a 1,500 horsepower engine. When I was there in June she was scooping sand at the rate of two and three scow-loads a day, and a tug was kept busy night and day towing these scows away.

The banks are covered with peat, and as the sand under it is dug away this peat falls off in large chunks and floats down the canal, often with a tree or bush attached to it.

One peculiar thing we noticed at the Sagamore Bridge was that the current always flowed out, no matter whether the tide was rising or falling, though there is an 8-foot tide at the mouth of the canal less than two miles behind. We couldn't understand this, as the end of the digging was just above here and ended abruptly, as is shown in one of the photographs herewith.

A gang of men were working on a track on the right bank of the canal to carry away the sand from the steam shovel. This



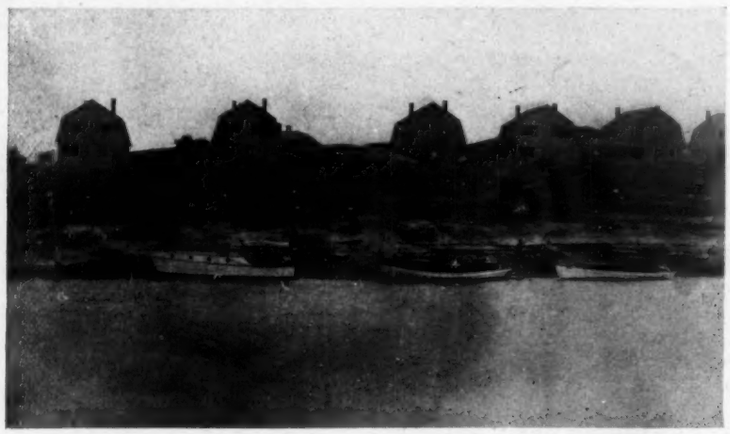
DETAILED DRAWING, SHOWING DIFFERENT STAGES OF WORK ON THE CANAL

BIRDSEYE VIEW OF THE EASTERN END OF THE CANAL FROM THE END OF THE DIGGINGS. A, CAPE COD BAY; B, COALING STATION; F, DREDGER; H, TRACK TO DUMP

THE END OF THE DIGGINGS AT SAGAMORE, LOOKING IN THE OTHER DIRECTION FROM THE PREVIOUS PHOTOGRAPH, SHOWING THE TWO STEAM SHOVELS NOT IN USE

is as far as the canal has been dug to its full depth from the Cape Cod Bay side, though for about half a mile further it has been dug down to about high-water level. At present there is a single track running from the steam shovel at work here to a switch, where another track runs off to the dumping ground. This causes considerable delay, as when a work train is filled up it pulls down to the switch and waits for the empty train to come up from the dump. They will probably have two tracks working here shortly, which will expedite the work somewhat.

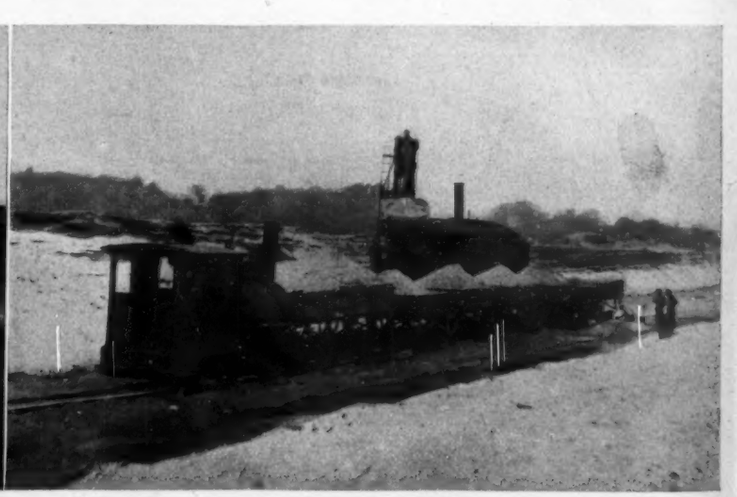
From this point the next mile or so is through a farming district, where, as yet, no digging has been done, although there were two steam shovels at the head of the digging which were not in use when I was there. From this point the canal takes a turn to the left, in order to follow the valley between the hills. At the little village of Bournedale, on the right side of the canal, the old station and freight shed have been abandoned, as the railroad has been moved to the other bank of the canal and a new station has been built. Unless there is a bridge built here, this will be rather inconvenient for the inhabitants of the village, as the canal will be between them and the station. At Bournedale a steam shovel is at work, and a stretch here of about a mile has been dug down to high-water level, as is shown in some of the photographs which I took.



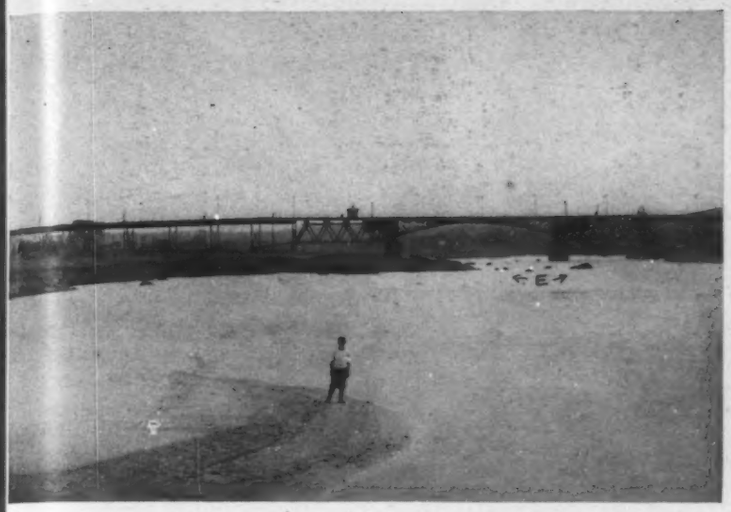
THE WRITER'S BOAT (THE FIRST ONE) AT ANCHOR IN THE CANAL

From this point to Buzzard's Bay, some 2½ miles, there has been no digging whatever. Through this stretch to the Monument River is quite a swamp, and here they are building a dredge, which should be in operation before very long. The canal will follow the course of the Monument River to its mouth for a distance of some 2 miles. A good idea of the Monument River and this section of the canal may be had from the photograph. The river is shallow, as may be noticed from the figures of the two men standing in the water. At Bourne a new steel highway bridge has been built. This bridge is very high, and has a 160-foot lift draw in the center, through which boats will have to pass. The river at this point is very shallow, with a rocky bottom, many of the rocks showing above the water, and it is evident that con-

AT BOURNEDALE, WHERE THE CANAL IS DUG TO HIGH WATER LEVEL



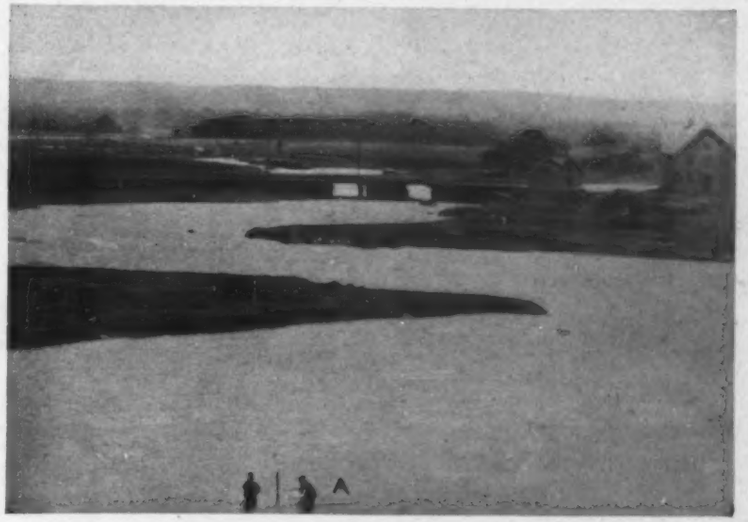
A WORK TRAIN AT BOURNEDALE, HAULING SAND FROM THE DIGGINGS



NEW STEEL HIGHWAY BRIDGE (B) OVER THE MONUMENT RIVER. E, ROCKS SHOWING ABOVE WATER

VIEW FROM THE RAILROAD BRIDGE, LOOKING TOWARD THE BUZZARD'S BAY ENTRANCE. A AND B, DREDGES AT WORK ON APPROACHING CHANNEL

siderable blasting will have to be done at this point. There is a new steel drawbridge for the railroad close to the entrance to Buzzard's Bay over which all the Cape trains will have to pass. There are several dredges at work here on the channel out into Buzzard's Bay. The banks along the edge of the river here are of peat. This peat has been cut away in blocks of 1 foot square and 4 or 5 inches thick. These have been built up like a brick wall, in some places as high as 8 feet, and the sand from the dredges has been pumped back of this peat wall, the wall holding it from running back into the channel. These sand lakes are shown in the photographs of the railroad bridge. There are two dredges at work here, and a new one was being built while I was there. I was told that there had been as many as five dredges at work on this channel, the last one being 3 miles out in the Bay, where the southern entrance of the canal will be.



THE MONUMENT RIVER NEAR BOURNEDALE. THIS RIVER WILL HAVE TO BE DREDGED

It looks as if the village of Buzzard's Bay would be quite an important one when the canal is finished, as it will be a railroad junction and canal terminus. The canal company is making a great many improvements at this point. At the other side of the canal, Sagamore will probably be the principal point. It is within 2 miles of the Cape Cod Bay entrance. There is no town directly at the entrance of the canal on the Cape Cod Bay side.

It will be seen from the foregoing and from reference to the map accompanying this article that some 3½ miles of the canal proper has been dug to nearly the required depth. About 1 mile in the center has been dug to high water, while the balance has not been touched. There is still considerable dredging to do in the Monument River and in the approaching channel on the Buzzard's Bay side. I could get no estimate on how long it would take to finish this work. It will probably be two years at least before boats are running through. When they are, the trip to or from the New England coast for small boats will be much easier than at present.

LAYING TRACKS FOR HAULING AWAY SAND AT THE END OF THE CUTTING BEYOND SAGAMORE

FROM THE BRIDGE AT BUZZARD'S BAY, LOOKING EAST OVER RAILROAD BRIDGE. B AND E, DREDGES; A A, MOUNDS OF SAND THROWN UP BY DREDGES

Teaching the Power Boat Manners

Some Sloppy Weather Hints for the Skipper

By J. T. ROWLAND

THERE are a number of reasons why the motor boat is not as good a sea boat as its sailing rival. Some of these are due purely and simply to the absence of sail, with its steadying effect, and others are the result of the type of hull which the power boat has brought into common use. To the sailing man all (we are dealing in generalities) power boats look topheavy. Their comparatively shoal draft, high freeboard and barrel-like amidship section combine to give the general impression that they lack "bearings" and would be likely to keep on going over once they started rolling in a beam sea.

As a matter of fact, this is largely an illusion. There are, it is true, many of the smaller "raised-deck cruiser" affairs used on sheltered waters which have such exaggerated topworks as to be actually unsafe in anything more than a ripple; but the same might also be said of the small, multi-decked passenger boats which abound on the same waters. They are not intended to go outside—and they know it.

But with the real seagoing power cruiser the case is different. Take, for instance, the Dream, which won this year's Bermuda race. She looks tremendously high-sided, has very moderate draft, and rolls easily; yet she went successfully through some very bad weather between Cape May and Bermuda. The reason is not far to seek. The designer succeeded in so distributing her weights with reference to her sectional areas that even when the boat was heeled down onto her beam ends the center of mass was still to windward of a line drawn vertically upwards from a point representing the center of buoyancy. This sounds complicated, but it means simply that she will right herself again if rolled over on her beam ends—just as a keel sloop will, the only difference being that the fact is more apparent in the case of the latter, because her ballast is stuck down on a long keel where you know it must be pulling her back upright, whereas no one can tell at a glance whether a power boat is *crank* or not, because all her weights are inside, out of sight.

However, we may dismiss the idea that a *well-designed* power boat will roll over. The writer has had some experience with the breed in varying conditions of weather from the Gulf Stream to the Arctic, inclusive, and still lives—so feels inclined to set down as prejudiced the class of remark oft repeated by ancient shellbacks to the effect that "thet air contraption 'll roll over on ye ef ye ain't keerful!" If certain fundamental principles of design known to every naval architect are observed, it is a simple matter to build a power boat which, in spite of shoal draft and high freeboard, cannot roll beyond a given angle—unless, of course, she has the ill-fortune to be caught broadside in the rush of a great combing sea; but no small boat has ever been built which would be absolutely proof against an attack of that sort. We may then establish it as a preliminary axiom that a power boat may be subject to rolling badly up to a given angle and still be in practically no danger of actually rolling over.

This much is in her favor, but the power boat has other characteristics which are less commendable. Suppose we are running out of any harbor on the north side of Long Island Sound some day when the wind is blowing fresh from the east. To make it a little nastier, we will have the tide running ebb—i. e., against the wind out in the Sound. We are going to Newport, so as soon as the harbor is cleared we haul up and head pretty well into the wind. The first crest we swoop over slings our little 30-footer's bow high up in the air; it does not drop easily into the next trough, as expected, but hangs poised in midair until the next sea is charging down upon us, and then plunges headlong into it midway between crest and trough.

The boat fetches up as if she had struck a rock, and the sea being steep and choppy, breaks over the bows and makes a clean sweep of the craft, deluging us in the cockpit under an avalanche of green water.

The slide hatch has been pulled only two-thirds of the way closed; some of the water pours down into the cabin and wets the spark plug; the engine stops. Tableau!

But our troubles have only begun, for now the boat is without steerageway and helpless. Presently her bow is thrown off with the scend of the sea and we are lying broadside-on in the trough of the sea.

Here comes a big-crested comber. Crash! The green water hits our weather bilge a resounding thwack, and over she rolls hard down on her beam ends, while the sea makes a clean breach

THE RESULT OF TRYING TO DRIVE A SMALL POWER BOAT INTO A HEAVY HEAD SEA

of her weather rail, fore and aft, and pours into the cockpit and over the cabin. We think for a moment that the little craft is going to turn turtle, and stand ready to scramble up onto her bottom; but once the sea has passed under her, she rights herself with a quick jerk and is ready to repeat the performance.

Meantime, everything in the boat that is not double-lashed has gone sliding on its ear—the stove is upset, the crockery smashed, and the kerosene can is regurgitating its malodorous contents all over the cabin floor and on the cushions, which have slid off the weather transom. The engineer has hastily removed the spark plugs and is busily drying the same, wedged into a corner of the cabin and standing one moment on his feet and the next on the top of his head. He "hopes" the spark coil has not got wet. At any rate, it will be some minutes before the "bally bunch o' junk" will be ready to start again.

Meantime, our worthy owner and skipper is a bit flustered—his boat is obviously not under command, the water is too deep and the sea too bad to permit of anchoring. Ah, the very thing; how stupid not to remember! He sticks his head down to the hatch and bellows: "Hi'!' Chief, pass me up that sea anchor stowed up in the forepeak.—Yes, I must have it!"

Mutterings from below, as the chief, holding a spark plug between his teeth, essays to navigate the length of the oil-besmeared and crockery-strewn cabin.

At last we have the drogue or sea anchor (a cornucopia-shaped fabric of canvas with an iron hoop to hold the mouth open) overboard at the end of a long rode, the inboard end of which is made fast on the bitts forward.

"That will hold her head to the wind!" shouts the skipper, triumphantly. The drogue is of about twice the size that you would need for a 30-foot waterline sloop or yawl; but alas! it fails sadly of its purpose. The boat still keeps broadside-on to the sea and walks off with the drogue like a puppy with a straw in its mouth. Why? Simply because we have here a craft which has its maximum 4 feet of dead rise at the bow and yet has practically no forefoot. The wind gets a "plumb lovely" grip on her bow and the water none at all. No wonder she won't head up into it!

Let us not worry for the present about the ultimate fate of this helpless little craft; she has served to illustrate the first law of motor boat handling: *never attempt to drive a boat directly head-on into a steep sea*—even with the engine throttled down.

It sounds simple. "Everyone knows that," you say. It is surprising, then, how few have the strength of their convictions sufficiently to act upon the knowledge. Any day in the Sound when there is a fresh Easterly blowing you may see them by the score—power boats of all sizes and shapes going East—diving bows under and making poor progress and worse comfort just because the skipper is too stubborn to deviate slightly from his course.

This is the time when the motor boat will do better to beat to windward like a sailboat; the difference, however, is that she can be run much closer to the wind than the sailboat can lie (say at an angle of 30 degrees) and still make good progress and good weather of it.

If our friends in the 30-foot cruiser had only had sense enough not to try to drive head-on into a steep, combing sea, all their troubles would have been avoided.

Let us suppose now that we are offshore in a heavy gale. The sea is running so high and has such a stop to it that it is no longer simply a case of altering our course slightly to suit it: it is so nasty that we must forget our course altogether and give our whole attention to jockeying the boat through the sea. Each successive crest is a problem in itself which must be mastered successfully under penalty of foundering.

If we already have the wind aft and there is plenty of sea room (or a harbor) under our lee, it will probably be best to run. I say probably, because this depends a good deal upon whether the boat has a real stern or one of those miserable chopped-off affairs which would stand about as much chance of rising over a combing sea as the stern end of a coffin.

Say, however, that our boat has the conventional pointed power boat stern with fair buoyancy: Put her dead before it, let your engine run slow (no boat can go fast enough to keep ahead of the sea; the latter, remember, is running with practically the same velocity as the wind) and use oil. The oil may be issued in various ways. A satisfactory substitute for a regulation oil bag is a large tin can stuffed full of saturated waste and punched full of holes. The lid should be on and the can should be dragging overside just awash—it does not need to be submerged, as the oil does not have to be run out fast; a few drops will form a "smooth" over an area of several square feet, or you may allow it to trickle slowly out of some waste pipe.

If you are anxious, for any reason, to avoid going dead to leeward, work her head to port or starboard (as the case may be) in the smooth patches between heavy seas, *but be sure you are quick to swing the stern up*, to meet each combing crest squarely at right angles; otherwise, there is danger that the stern will be slung off to leeward and the boat made to broach-to—i. e., present her broadside to the sea. When caught in this position by a combing sea, even sailing vessels have been known to be rolled clear over, so great is the torque of the curling crest.

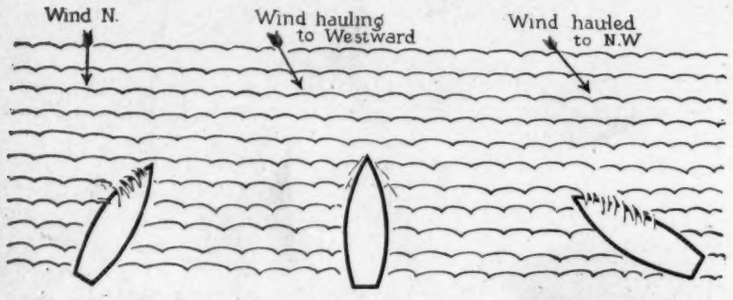
Great care must be exercised in steering a boat before a heavy sea not to allow her to yaw too far to either side. It will be found that the vessel will try to take a sheer to windward while running down the slope of a following sea. When the crest is passed and the stern drops into the trough, the opposite is the case. If one waits for the boat's head to swing before trying to catch her, he will have to put his helm hard over, and the result will be a wild yaw the next moment in the opposite direction. The skillful helmsman anticipates his craft's next action and

OWING TO HER HIGH BOWS AND SHOAL FOREFOOT, THE POWER BOAT CAN SELDOM BE HELD HEAD TO WIND BY A DROGUE

meets it with a *small* turn of the wheel before it has gathered momentum. A scrap of sail forward is, of course, a great help in keeping a boat going straight to leeward.

So much for running. Now suppose the wind happened to be ahead of the beam when it breezed up. Obviously it would be a risky matter to try to run off before it, because this would involve bringing the boat broadside-on to the sea at some point of the turn; and this is the very thing which we most desire to avoid. Had we foreseen earlier that there was going to be a blow and put her before it then, that might have been the part of wisdom; but it is too late to make the manœuvre now.

There is only one thing to do—take the wind broad off one bow or the other and slow the engine down as much as possible without stopping it. Other things being equal, it is always better to take the wind on the starboard bow if the wind is shifting to the right and on the port bow if it is hauling to the left. The reason for this is most easily explained by an example. Suppose the wind is N. and we are hove-to on the port tack; we would then be heading about N. E. Now suppose the wind goes around to the left in a couple of hours so that it is blowing from the N. W. The sea, however, is still coming approximately from the old direction (N.), so that, as we are now heading N., we are taking it bow-on. This will not be comfortable, to be sure, if the boat is going ahead at all; but it is better than if we were on the other tack taking the wind over the starboard bow, for in that



The left-hand and center diagrams show a vessel hove to properly on the port tack with the wind hauling to the left. As the wind shifts, the boat keeps heading up into the sea. The right-hand diagram shows the same vessel wrongly hove to on the starboard tack with the sea (which is still coming approximately from the north) striking her nearly broadside on.

case we would now be headed way around nearly W., with the sea coming in directly abeam, which is the most dangerous position of all. (See diagram.)

The great difficulty in our present case is to slow the engine down so that the boat will not be driving into the sea, and yet will keep sufficient steerageway to be manageable. This is not always possible with a gasolene motor, as they will not keep running below a certain speed; but adroitness in handling the wheel will do much towards working a boat through a nasty sea, even at a fair rate of speed. In the last Bermuda race the engine of the Kathemma was not slowed down once, yet we managed to climb to windward, in spite of a continual series of heavy squalls and a high sea. The only thing that stopped her was the feed pipe carrying away down in the bilge, and then, of course, the engine quit altogether.

One steers a boat under such conditions so much by instinct that it is rather difficult to analyze the philosophy of the thing for the benefit of the tyro, but there are a few points that can be borne in mind. The first one we have already seen demonstrated: Don't try to drive her straight up into it; yet now comes a seeming contradiction: If you see a big combing sea rushing down at you, the more nearly head-on you can take it, the better; but the instant its menace is past let your bow swing off so that, instead of dropping straight into the following trough, the boat will slide down into it diagonally and will have time to rise over the next ascent. In other words, let your bow swing to leeward as the crest is passed and to windward as the trough is crossed. You will soon find that the boat has a natural tendency to do this very thing, and that your furthering of this tendency will not only make her meet the wave crests better, but will "ease" her and make her behave more smoothly in every way. Above all, don't try to hold rigidly to a course; watch your sea and humor your boat; forget the compass altogether for the time being.

Personally, I have never tried to use oil under these conditions on a power boat, and I have never known anyone who found it of much use. You are generally going ahead too fast for the film to have time to spread to windward.

So much for the boat which has steerageway; now let us go back to the little 30-footer which we left broken down and wallowing in the trough of the sea. A true sailorman refuses to be beaten so long as he has a plank under him; there must be something we can do for her. If she has an auxiliary sail rig, it may be possible to get her off before it under the jib. At any rate, it is worth trying. A friend of the author's once managed to run a broken-down 30-foot power boat before a September gale in the Black Sea under a jury rig improvised out of an awning set on the anchor davit forward.

In the absence of sail, however, there is one other wrinkle that may be used to advantage: make your sea anchor fast from the stern instead of the bow and ride the seas stern-first. Since you are going ahead only slowly with the force of the wind, it will be as well to use oil rather freely. Most of our modern power boats are very low aft, and are not fit to ride out a blow to a drogue in this fashion; but it is better, at any rate, than lying in the trough of the sea.

While on the subject of the drogue it may not be amiss to mention some of the ways in which one can be improvised if the standard article is not on board. For a small boat a pair of crossed oars with a bridle between the ends and the rode made fast to the midpoint of the bridle is an effective sea anchor. The oars should be weighted with a piece of pig-iron or a small anchor to keep them under water where they will offer the greatest resistance to the boat's leeway. The bridle is necessary to prevent their simply being towed end-on without making any drag at all.

Another scheme is to bend a small triangular sail (jib or trysail) on to a short spar and ride to this. The rode in this case again should be made fast to a bridle on the spar. The clew of the sail must be weighted with a spare anchor or some other heavy weight, so that it will hang straight down from the spar and offer the maximum resistance or drag.

Probably the most effective sea anchor for the power boat of fair size is one of her own small boats. A stout bridle must be rigged from stem to stern and a heavy weight secured to one gunwale. Then the small boat will lie on its side entirely submerged, with the bottom to windward. It will take a good deal of a ship to walk away with this.

Occasionally one may find a power boat so rigged that it is possible to set enough sail aft to more than overcome the windage of the high bow; and in such a case it is, of course, best to heave-to at an angle of about 45 degrees to the wind, like a sailing vessel; but such a boat, unfortunately, is the *rara avis* of the fleet.

An excellent device for a power boat which is built to go to sea would be a small centerboard built in well forward. With this down, the boat's bow would have a sure grip on the water, and its tendency to pay off would be overcome, so that she would lie to a drogue beautifully with her engine stopped. This is an idea which, so far as I know, has never been tried. It would also be a boon to the motor boatist when at anchor, because there is nothing so annoying as a boat which sails around her hook in a crowded anchorage and lifts the paint off her next-door neighbor on each side.

Finally, when the engine stops unexpectedly in a tight place, don't stand and stare stupidly at the engineer as if he could "wish it" into running again, but act at once on the theory that the bally thing is dead. Get up on deck and see what your natural seamanly instincts can devise to save the ship without the aid of the bunch of junk down below.

The NATIONAL CARNIVAL ON THE HUDSON

A Week of Racing that Brought the Season to a Close

PHOTOGRAPHS BY E. LEVICK

FOR some years it has been the custom to wind up the active racing season in the East with a National Motor Boat Carnival, held under the auspices of the National Association of Engine and Boat Manufacturers and the Motor Boat Club of America some time during September. Last year the races were shifted from the Hudson River, where they had previously been held, to Huntington Bay, owing to the unsuitable water conditions on the Hudson and the ever-prevalent driftwood, which effectively "put a crimp" in the speed aspirations of many of the contenders. Huntington Bay, however, on account of its inaccessibility, did not prove a satisfactory course, and this year the event was moved back to the Hudson, though it was carried farther up the river, the course being laid off opposite Yonkers, where the committee was assured that the driftwood would be a negligible quantity. The headquarters for the event was the Yonkers Yacht Club, and a 7½-mile course was laid off, up and down the river, opposite the club-house.

A whole week of racing had been planned for all classes of boats, and from the number and variety of the events and the publicity which had been given the Carnival a record-breaking fleet of motor boats should have been attracted. As it was, only 35 boats took part in the entire week's racing. This does not speak well for the interest in this branch of the sport. At least 50 boats should have been on hand, as the Carnival had the whole Hudson River, Long Island Sound, New York Bay and Jersey coast clubs to draw from, to say nothing of the clubs in other parts of the country which could have shipped speed boats to the Hudson with very little trouble. When one compares this entry list with the entries obtained at the regattas of such clubs as the Larchmont, Corinthian of Marblehead, New Rochelle, etc., it would seem to indicate that the average power boat man is, as yet, not convinced of the pleasure that may be had from racing.

On the whole, the weather during the week was as good as can be expected in the latter part of September (the races were held from the 16th to 21st), though two events had to be postponed on account of high winds and rain. The claim as to driftwood was not borne out, as this menace was still very apparent, several of the boats being put out of commission on account of the flotsam brought down by the Hudson, though it was not as bad as in previous years. A number of boats were damaged and two or three sank, though it is probable that the disasters to the latter were caused more by the wash of some of the other boats than by driftwood. It is surprising how easily a 20-foot "plane" will turn turtle or make a dive for the bottom when it hits the wash of one of its competitors, and a number of skippers of these boats had not yet learned that they must keep

(Continued on page 324.)

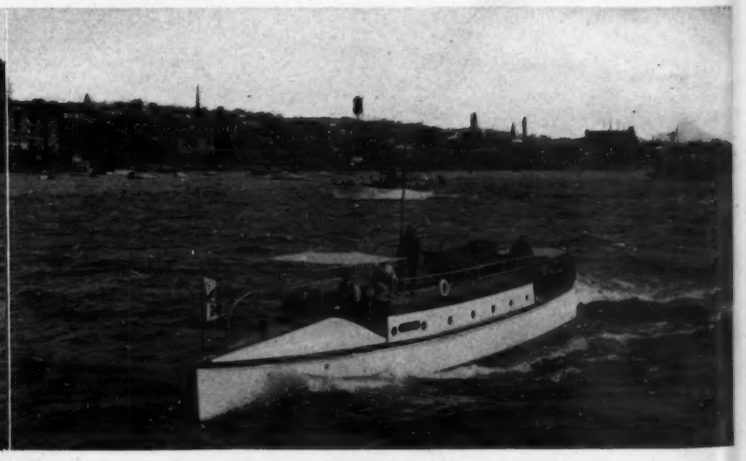
THE YONKERS YACHT CLUB, HEADQUARTERS OF THE NATIONAL CARNIVAL

ALFRED S, A CONSISTENT WINNER IN THE CRUISER CLASS

BIG BALAAM, THE ONLY HIGH-SPEED DISPLACEMENT BOAT

ELISE IN A HEAD SEA

PETER PAN, SR., WINNER OF THE RACE TO PEEKSKILL AND RETURN



AVIS, WINNER OF PEEKSKILL RACE IN CLASS D

SUMMARY OF THE WEEK'S RACING

CLASS J.—OPEN BOATS OVER 25 FEET. 22½ NAUTICAL MILES. CORRECTED TIME

BOAT.	Handicap.	1st Day.	2d Day.	3d Day.
Elise	28:59	2:12:19	1:57:41	1:59:46
Greyhound	Scratch	2:20:33	2:03:28	D.N.S.
Esolanie II	.....	D.N.S.	D.N.F.	D.N.S.

CLASS G.—OPEN BOATS UNDER 25 FEET. 22½ NAUTICAL MILES

Valiant II	52:00	2:17:58	2:08:17	2:16:09
Almel	Scratch	3:03:45	1:47:48	2:10:27
Bunk III	32:58	D.N.F.	2:05:39	2:03:58
Gray Hare	6:44	3:51:12	2:36:23	2:49:54
Geraldine	16:49	D.N.S.	2:17:33	D.N.F.
Elm	59:48	2:59:40	2:50:09	3:13:55

CLASS F.—CRUISERS UNDER 40 FEET. 22½ NAUTICAL MILES

Alfred S	1:21:40	1:54:20	1:51:10	2:05:21
Empire	Scratch	2:18:37	2:14:24	D.N.S.
Canandice	17:34	2:33:28	2:29:39	2:37:12
Idle Time	15:46	D.N.S.	2:24:21	D.N.S.
Ruth II	44:39	D.N.S.	D.N.S.	2:35:29

CLASS E.—CRUISERS 40-60 FEET. 22½ NAUTICAL MILES

Peter Pan, Sr.	Scratch	1:46:41	1:27:57	1:32:41
Spindrift	47:38	2:01:14	1:46:13	1:50:30
A. Mietz	25:23	2:24:49	2:13:32	2:13:25
Lady Betty	54:16	.....	1:44:59	1:47:59

CLASS D.—CRUISERS OVER 60 FEET. 22½ NAUTICAL MILES

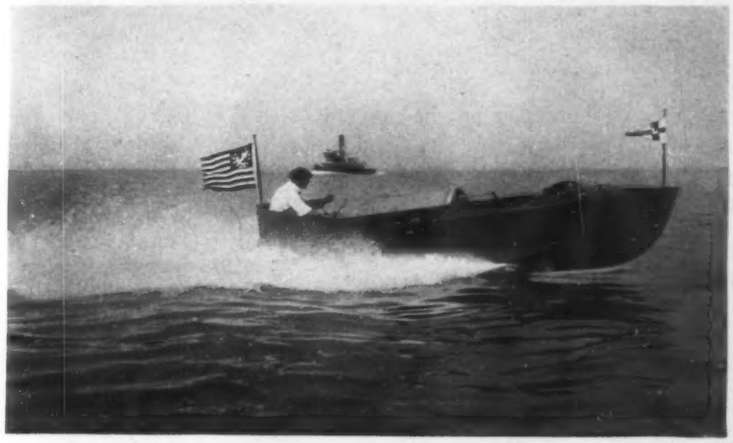
Avis	Scratch	1:57:01	1:46:41	2:07:46
Caroline	34:24	1:57:14	1:46:48	D.N.S.

CLASS C.—12-METRE BOATS. 30 NAUTICAL MILES

Peter Pan V	0:00	53:16	1:43:34	1:01:06
Debutante	0:00	D.N.S.	D.N.F.	1:14:49
Tech, Jr.	0:00	D.N.F.	D.N.S.	D.N.S.

CLASS B.—RACING BOATS 40 FEET IN LENGTH. 30 NAUTICAL MILES

Big Balaam	0.00	1:13:22	1:22:19	1:13:16



HUMPTY DUMPTY, THE NEW ORLEANS REPRESENTATIVE

CLASS A.—RACING BOATS 33 FEET AND UNDER IN LENGTH. 30 NAUTICAL MILES

Vita	36:08	47:15	54:54	48:25
Gunfire, Jr.	20:43	1:03:21	1:03:38	2:31:32
Muirmaid	23:46	58:20	1:30:18	D.N.S.
Flinders	33:08	1:14:22	1:26:00	1:08:17
Edith II	27:27	1:01:09	D.N.S.	D.N.S.
The Limit	.....	D.N.F.	D.N.S.	D.N.S.
Bull Moose	24:36	D.N.F.	1:57:33	1:30:32
Humpty Dumpty	.....	D.N.F.	D.N.F.	D.N.F.
Mike's Dream	.....	D.N.F.	D.N.S.	D.N.S.
Bug	24:57	1:11:00	2:32:38	D.N.S.

CLASS A.—POUGHKEEPSIE AND RETURN. 104 NAUTICAL MILES

BOAT.	Handicap.	Elapsed.	Corrected.
Debutante	18:19	4:31:40	4:13:21
Vita	10:26	4:58:05	4:47:39
Flinders	Scratch	6:08:08	6:08:08

CLASS D.—PEEKSKILL AND RETURN. 49 NAUTICAL MILES

Avis	Scratch	3:33:34	3:33:34
Caroline	1:14:55	4:49:59	3:35:04

CLASS E.—PEEKSKILL AND RETURN. 49 NAUTICAL MILES

Peter Pan, Sr.	Scratch	3:00:36	3:00:36
Lady Betty	1:58:10	5:32:45	3:34:35
Spindrift	1:43:43	5:24:15	3:40:32
A. Mietz	55:16	5:25:51	4:30:35
Fortuna III	50:37	5:42:14	4:51:37

CLASS F.—PEEKSKILL AND RETURN. 49 NAUTICAL MILES

Alfred S	2:19:36	6:36:48	4:17:12
Canandice	Scratch	5:54:18	5:54:18
Ruth II	58:59	6:56:19	5:57:20
Alflorida	12:23	6:36:32	6:24:09

CLASS A.—HANDICAP SPEED RACES BASED ON PAST PERFORMANCES. DISTANCE 60 NAUTICAL MILES

	Start.	Finish.	Elapsed.
Flinders	10:00:00	1:31:59	3:31:59
Vita	10:48:08	1:31:09	3:16:59
Gunfire, Jr.	10:55:44	D.N.F.	
Muirmaid	10:58:16	D.N.F.	

PETER PAN V, WINNING THE MILE SPEED TRIALS

CLASS B

BOAT.	Handicap.	1st Day.	2d Day.	3d Day.
Big Balaam		11:08:16	1:31:20	1:37:56

CLASS L.—RESTRICTED CLASS

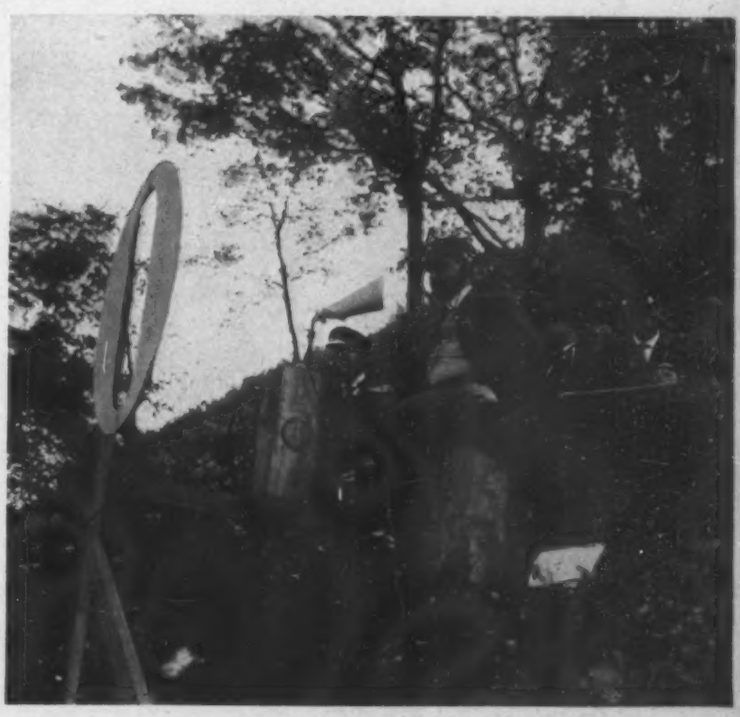
	Start.	Elapsed.
Humpty Dumpty	3:30	1:10:50
Muirmaid	3:30	1:21:56
Gunfire, Jr.	3:30	D.N.F.
Vita	3:30	1:30:16

FREE-FOR-ALL RACE. 30 NAUTICAL MILES

Big Balaam	3:00:00	1:13:16
Peter Pan V	3:00:00	1:01:06
Debutante	3:00:00	1.14:49
Flinders	3:00:00	1:41:25
Vita	3:00:00	1:24:33
Bull Moose	3:00:00	1:55:08
Gunfire, Jr.	3:00:00	2:52:15

MILE SPEED TRIALS

	Up-stream.	Down-stream.	Up-stream.	Down-stream.	Up-stream.	Down-stream.
Humpty Dumpty	2:15 1/5	2:05	2:19 3/5	2:07 3/5	2:23 1/5	2:15 4/5
Debutante	2:33 3/5	2:24 3/5	2:30 2/5	2:19 1/5	2:26	2:26 3/5
Peter Pan V	1:36 1/5	1:42	1:35 4/5	1:43 2/5	1:36 2/5	1:43 1/5
Baby Reliance II	1:31 3/5	Broke down.				



TIMING THE BOATS IN THE MILE SPEED TRIALS

Some Hints on Hauling Out

How to Take the Proper Care of Your Boat and Engine During the Winter

SO much has been written on hauling out a small boat and preparing her for her winter on land that the average man who does this work himself is already pretty familiar with how it should be done, and another article on the subject seems hardly necessary. There are, however, a number of suggestions and warnings that may always be repeated with profit to the old hand and also to the novice at the work, as well as some wrinkles which the professional employs to lighten the work and to make a satisfactory job. Wherefore these few hints may not be out of place at hauling-out time.

The average boat owner, when the season is over, merely takes his boat to some yard where all the work is done for him; but with the rapidly increasing number of yacht clubs with facilities for storage, the owners of boats under 30 feet in length often prefer to take care of their own craft and cover them up for the winter themselves. It is for these in particular that this article is written.

The principal thing to guard against in hauling out a boat is deterioration; and nothing will make a boat deteriorate so rapidly as a winter on shore when she has not been put into proper condition to withstand the ravages of the weather. It is scandalous the way some owners will take a good boat on which they have spent much money during the summer and, when hauling-out time comes, yank her up on shore, chuck the duffle out of her, drain the water-jacket of the engine—if it is a motor boat—and then leave her to the tender mercies of a Northern winter and spring. It is no wonder that a new boat will look like one ten years old before the owner gets busy with a scraper the following spring. In no way is the saving of a few dollars for a suitable covering more harmful than this.

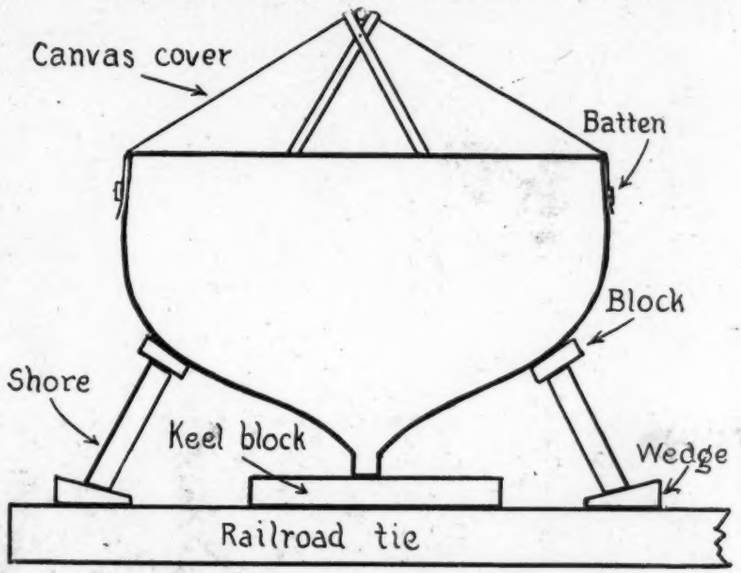


DIAGRAM FOR HAULING OUT A BOAT AND COVERING HER UP FOR THE WINTER

HAULING OUT AND BLOCKING UP

While it is, of course, possible to leave a boat in the water during the winter, there is always danger of damage by ice, especially in tide water, and it is always preferable in a small boat to haul her out, if possible. If this is done at a club or yard where there are regular ways, and a cradle and purchase for hauling out, the work is easy, the cradle being run down on the greased ways until it is covered at high water, when the boat can be floated in over it until she rests snugly in the cradle, shores or blocks being placed under her on each side to keep her on an even keel.

With a boat up to 20 or 22 feet long, however, it is not always necessary to have regular ways, as the work can be done on any shelving beach or bank with the aid of half a dozen planks laid on the ground and some wooden rollers. The planks should be laid end to end in two rows about 5 feet apart, running them under the water to a depth slightly deeper than the draft of the boat, weighting them with stones to keep them down until the weight of the boat is on them. For rollers, any round sticks 5 or 6 feet long will answer. They may be cut from an old spar, if one is available. These rollers should be inserted beneath the keel as the boat is floated up on to these temporary ways. At least four will be necessary, taking out the after one as the boat is hauled over them and inserting it again under the bow, so that she will always be resting on the four. If located on tide water this work had best be done at high tide, so as to save hauling any farther than is necessary.

The purchase should be a three or four-part tackle, the upper end anchored securely to a stake driven into the ground well up on the bank. A set of second-hand blocks with sheaves capable of taking an inch rope will be plenty large enough. It will take very little actual power to move a fairly large boat in this way, two or three husky members of your crew being all the help necessary to do the work. The track can be run off at any desired angle so as to place the boat in a good position, and by "cutting" the rollers—that is, placing them at an angle to the keel—the boat will slide over easily in any direction.

In hauling out, be sure to get the boat well above what will be the highest stages of the spring tide, so that you won't be called up some night in the late winter by a telephone message from the club that your boat is adrift.

Care must be taken not to lay these boards for temporary ways over any humps or hollows in the land, which may strain the boat as she is run over them by reason of the weight not being distributed evenly on the four rollers. Many a boat has had her back broken or been "hogged" in this way.

After getting her in the desired position on a good level spot, the hull should be blocked up solidly, care being taken to distribute the weight of the boat evenly throughout its length. See to it that the ground is hard and will not settle under any part of the craft. The keel must not be allowed to rest on the ground, but the whole boat should be blocked up about a foot above the earth. For this purpose three or four blocks are necessary if the boat has a long keel, as most power boats have. These blocks may be old railroad ties or any pieces of timber, 8 x 8 inches or larger, and about 8 feet long. Any odd lengths will do.

These should be placed athwartships of the boat and should be leveled up by means of a line or a plank so that the boat rests evenly on them. If too large to be inserted under the boat as she stands on the rollers, she can be rolled up onto them by laying the plank track along them, taking away the planks afterwards. If the boat is a power boat, care must be taken to see that one of these cross blocks comes directly under the power plant, so as to relieve the strain on the boat at this point.

To keep the boat on an even keel at least two shores are required on either side, running from the turn of the bilge to the cross blocks on the ground. These may be of any spare stuff that is large enough, either round or square, in size depending, of course, on the size of the boat, but heavy enough to stand all

the necessary strain. At the upper ends of these shores, where they come in contact with the boat, slip in a piece of board or block covered with canvas, so that the end of the shore does not come directly against the planking of the boat. At the lower end drive in a wedge and put a nail through it. In this way the boat can be leveled up if she should list to one side or the other by reason of any of the shores being a little short or placed at different angles than the others. These shores should be placed about one-quarter of the distance in from either end of the boat, and, with the wedges properly driven in, will give the boat ample steadiness, so that one can work on her without doing any damage. This method of blocking is shown in the accompanying drawing.

If the keel does not rest evenly in any of the timbers a keel block may be driven in at that point so as to prevent any possible strain to the hull. If the boat is a sailboat with a short keel, these shores should be placed under the body of the boat more nearly amidships, while another shore can be placed under her forefoot, extending to the ground or to one of the cross-blocks, and wedged in the same way.

CLEANING AND VENTILATING

Before covering up the boat it is best to take everything out of her, stripping her right down to the hull, cleaning her out thoroughly, and arranging for proper ventilation. It is wise to see that every bit of water is out of her before she is covered up, as stagnant bilge water standing alongside the keel is apt to rot the frames and garboard plank. If you cannot pump all the water out, take a sponge and get her dry; or it may be necessary to bore a hole in the garboard plank to drain some of the water off and provide an outlet for leakage of rain water. Also clean out the muck that has collected in the bilge during the summer.

Proper ventilation should also be given attention, as the boat is apt to collect a lot of moisture inside during the cold weather if tightly covered up, which will sweat badly when the sun gets at it, then freeze, and take off all the interior varnish and paint.

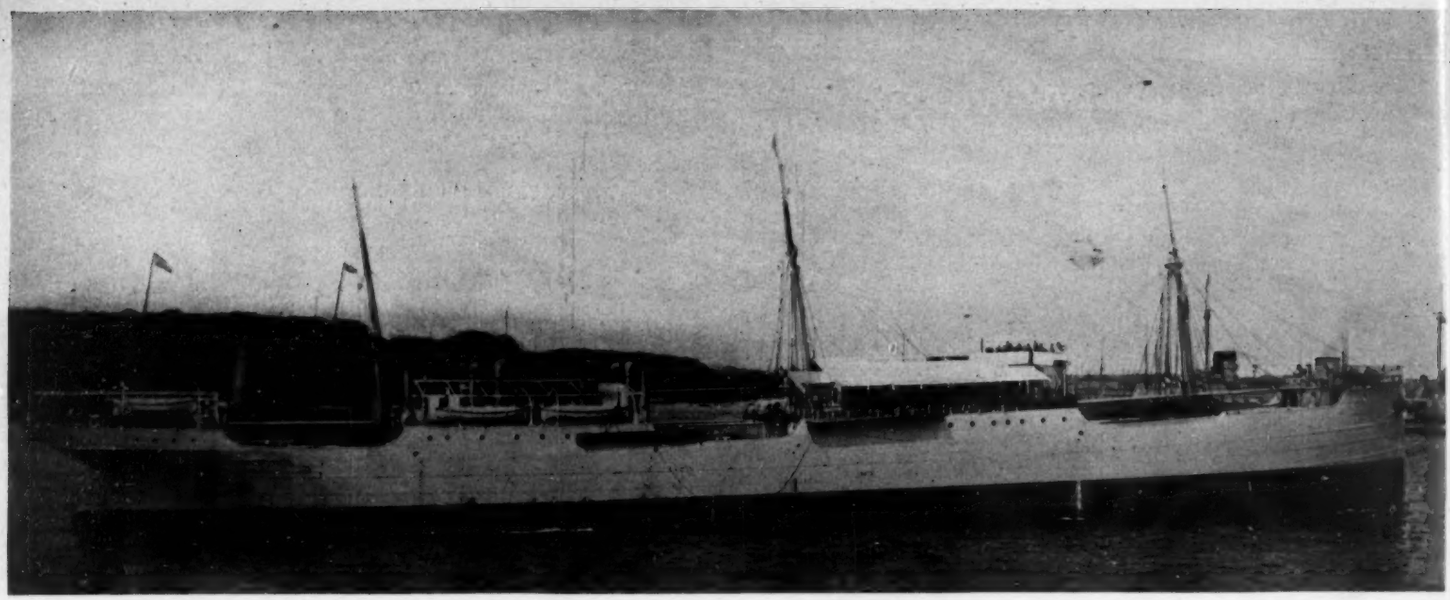
All lockers should be overhauled and their contents removed. Lockers and doors should be left open, floor boards should be left up, and if the boat is a cabin boat the ports should be left open to insure a circulation of air and keep the boat sweet and clean.

COVERING UP

To properly preserve a boat it is absolutely necessary to provide some covering for her during the winter months. If the boat is an open one, a waterproof tarpaulin or heavy canvas covering will be sufficient, though it must be large enough to cover her entirely, coming down over the gunwales. To put this on, a crotch or shears, some 2½ to 3 feet long may be set up at either end of the boat to hold a light ridge pole, which may be made from a joist, 2 x 3 inches, or, if the boat is a sailboat, the boom will answer for this purpose. To prevent any sagging in the center of this ridge pole, a shore may be inserted at that point. Stretch the canvas over it tightly, bringing it down to either side, and nailing it with wire nails through a strip of lath to the sides of the boat. At the forward and after ends this canvas will overlap, and should be fastened very carefully to prevent its blowing apart in the winter gales. A small opening may be left at one end close to the ridge pole to help the ventilation. This same kind of covering would do for a cabin boat, though the ridge pole would have to be raised somewhat higher than in the case of an open boat. If it is a sailboat, an old mainsail will generally furnish enough canvas to cover her, though it would be better if this canvas were waterproofed, if it is of light material.

A wooden covering, or pent house, however, probably makes the ideal covering, and will not cost much if a boat is kept at the same place for over one season. It will certainly pay to cover her in this way. Some cheap second-grade hemlock or chestnut boards, from ¾ to 1 inch thick, will do, and can be laid along from a ridge pole, rigged as described above, the lower ends projecting three or four inches over the edge of the boat. These can be laid perpendicular, and, to prevent their leaking, the edges should overlap at least an inch. If the boat is a cabin boat and she is not covered up entirely, at least see that the cockpit is carefully covered by a canvas or tarpaulin in such a way that the water will drain off. Nothing is as hard on a boat as having the cockpit filled up with snow, which is constantly melting, running into the bilge.

A POOR WAY TO TAKE CARE OF YOUR CRAFT



CHRISTIAN X, THE FIRST INTERNAL COMBUSTION TRANS-ATLANTIC STEAMER TO ENTER NEW YORK

Christian X, the First Diesel-Engined Vessel to Cross the Atlantic

The Blazer of the Atlantic Trail for Motor Boats

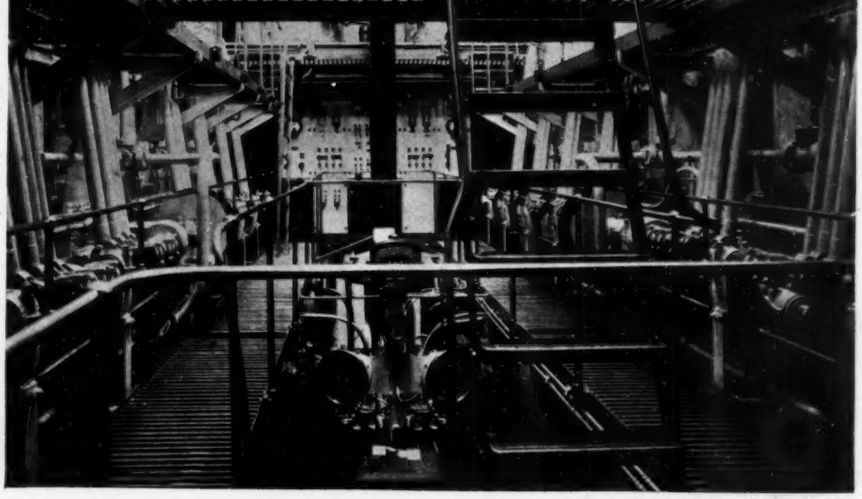
By DOUGLAS BRONSTON

ON a warm September day a few weeks ago, a beautiful white liner of strange appearance pushed her nose through the crowded waters of New York harbor. Proceeding up the swarming Hudson, which has been the scene of so many important events in the history of the world's progress, the Christian X finally warped into her berth at one of the great piers of the Hamburg-American Line. The sounds of her noisy greeting finally died away; her long voyage was over.

The first motor-ship had crossed the Atlantic and proved beyond doubt that the principles of her construction are sound and practical to the highest degrees of efficiency.

The first voyage of the Christian X across the Atlantic was conducted solely as an experiment. While she carried some freight, it was mainly for the purpose of ballast. Also, her commodious and luxurious passenger accommodations were not used at all. The only persons who made the trip were the crew of 46 men required in handling the ship, and of this number only 10 were employed in the engine room.

The size of the crew of Christian X presents a most interesting contrast to the number which would of necessity be carried on a steamship of equal tonnage and power. The Christian X is 370 feet long and 53 feet beam; her total displacement 9,800 tons, and her carrying capacity 4,900 gross registered tons. Her oil engines, of the Diesel type, develop about 3,000 horsepower each, and can drive her through the water at the rate of 13 miles an hour. A steam vessel with these same qualities would need at least 25 men in her engine room alone. More, her necessary equipment—engines, boilers, coal bunkers, etc.—would take up nearly three times the space occupied by the compact power plant of the motor liner. The room thus saved can be utilized in the new type vessel for additional cargo.



ENGINE ROOM OF THE CHRISTIAN X, SHOWING THE TWO DIESEL ENGINES

Christian X was built in the famous yards of Baumeister & Wain, in Copenhagen. After her launching she was taken across the North Sea to Germany, where she was completed and had the finishing touches added. On July 23 she left the River Elbe at Hamburg and started on her first long voyage, bound for Havana.

On her way she met with many vessels. Her captain told me it was

amusing to note that the others would invariably ask if his ship was in distress, and proffer aid. Always these kindly ships asked about the loss, as they thought, of her funnel or smokestack. To these inquiries the wireless invariably sent a polite reply, declining offers of assistance and explaining why the strange-looking ship had no funnel or needed one.

She arrived at Havana on August 9, after a voyage of seventeen days, having covered 4,627 miles at an average speed of 11.01 miles per hour. This was considered highly satisfactory. From Havana the Christian X proceeded to New Orleans. In both these ports she created a sensation, but the greatest honors came to her when she entered New York harbor and brought her maiden trip to a successful conclusion.

When she was a few hours out from New Orleans, in the calm waters of the Gulf of Mexico, the ship was halted for a while and a series of tests carried out in stopping, starting, turning, etc. She was found to be under almost instant control from the bridge. While going at "full speed ahead" the engines could be stopped and reversed to "full speed astern" in 8 seconds. This is a phenomenal performance, and will tend to obviate, in great measure, the danger of collision.

A glimpse into the engine room of Christian X reveals many interesting features. As stated, her engines are of the Diesel type internal-combustion motors, using crude petroleum for fuel. There are two of them, 3,000 horsepower each, set on opposite sides of the ship, each driving one of the twin screws. The controls and signaling apparatus are placed in the center, and are very simple and easily handled. Galleries run along the engines, rendering all parts easily accessible to the engine room force.

Fuel oil for the engines is carried in the ship's double bottom, between her inner and outer skins. An enormous amount of it can be placed in these novel tanks in space that could be used for nothing else and would be otherwise wasted. She can carry 1,000 tons of oil, enough to run her at full speed for 100 days—a time sufficient for the circuit of the globe—without replenishing. Auxiliary engines, which take up but a small amount of space, operate the electric lighting plant, refrigerating machinery, pumps, etc.

So successful was the voyage of the Christian X that several ships like her have been ordered, and the attention of the entire shipping world is centered upon vessels of her type. And her voyage up the Hudson to her berth in Hoboken bids fair to be as momentous a trip as that of the Clermont over the same body of water over a hundred years ago.

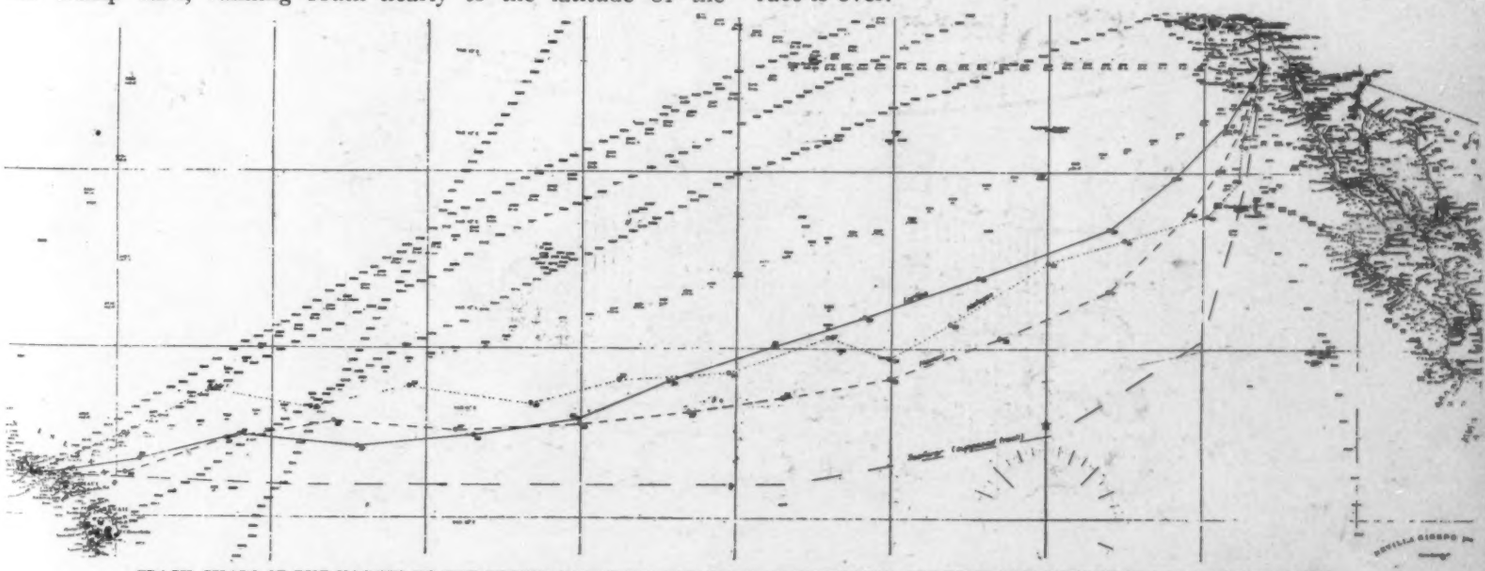
Courses of Contestants in the Trans-Pacific Race

IT is always an easy matter when a race is over to tell the fellow who lost where he made his mistake. In fact, it is more easy than tactful, for the reason that the choosing of a course, especially for a long-distance race, is rather a matter of judgment than of knowledge. And the best of human judgment—when wind and weather are concerned—will occasionally be at fault. Such an error is, of course, most glaring where one has taken the "long way around" in search of a fair wind—and then fails to get the wind. How we laugh at the chap who goes 'way across the Bay or the Sound, or whatever body of water we are racing upon, in search of a breeze, and then, owing to an unexpected shift of wind, suddenly finds himself the leeward boat of the fleet! He has lost on both counts: distance and position. Yet, if the wind had come as he expected when he made the manœuvre, we would have applauded his sagacity and daring.

Apparently very much the same sort of situation arose in the recent San Diego-to-Honolulu race, won by Capt. Lew B. Harris in the good old schooner Lurline. An examination of the accompanying track chart shows that Lurline's course (the solid line) was the first to draw to the westward, while Hawaii, Natoose and Seafarer kept south to pick up the N. E. trades, which blow stronger near the Equator. Seafarer evidently played this as her trump card, running south nearly to the latitude of the Hawaiian Islands before she hauled west at last for Honolulu.

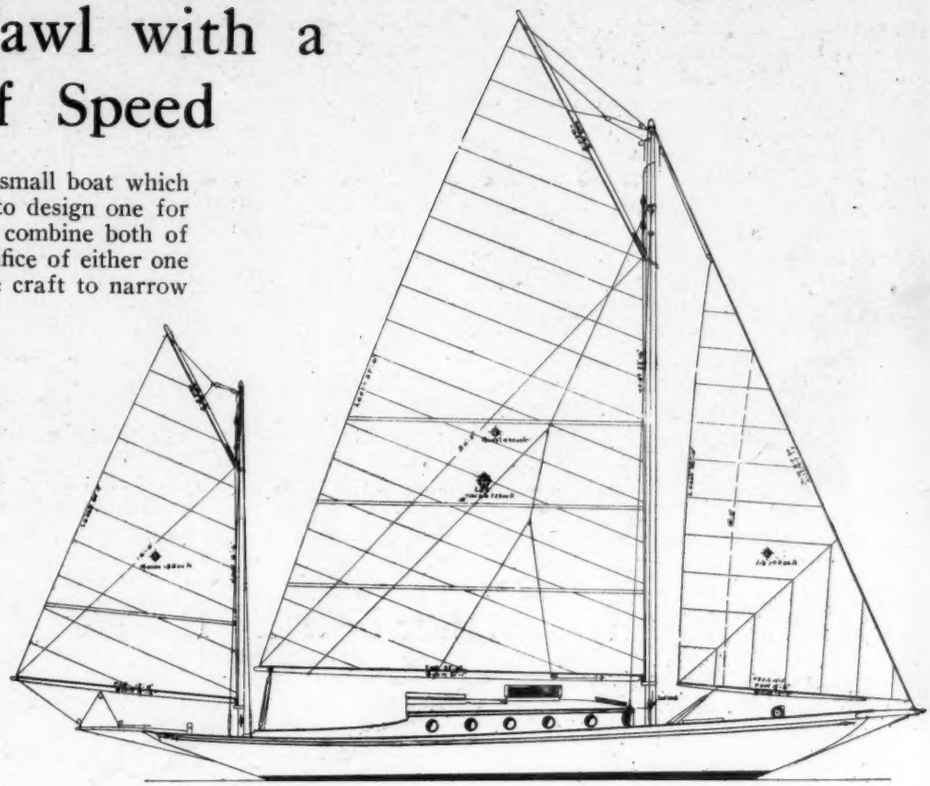
Now, it appears from her log that Lurline picked up the N. E. trades during the night of June 20, when in about 130 degrees West Long. (the meridian with the compass rose upon it in the cut). When Seafarer got the trades is not generally known; but if we assume—as seems reasonable—that once she picked them up she would haul west, the chart shows us that they were not encountered any farther east by Seafarer than by Lurline. In other words, the additional 300 miles which Seafarer ran south counted for nothing, so far as getting a fair wind was concerned! This must surely have been due to abnormal meteorological conditions, for a knowledge of which no navigator could be held responsible.

The lesson, however, seems to be that, as a general policy, it is wiser for the boat which is acknowledged to be the swiftest sailer to take a medium course and not play to extremes on either side. For the little yawl Natoose to have finished first, some extraordinary piece of good fortune would have been necessary; therefore, she would have been justified in taking long chances for a breeze. But not so the speedy Crowninshield schooner Seafarer, which needed only to sail an average race to win. However, as was remarked at the outset: it's easy enough to see mistakes when the race is over.



TRACK CHART OF THE YACHTS IN THE RECENT RACE FROM SAN PEDRO TO HONOLULU, SHOWING THE COURSES OF THE VARIOUS BOATS

An Able Little Yawl with a Good Turn of Speed



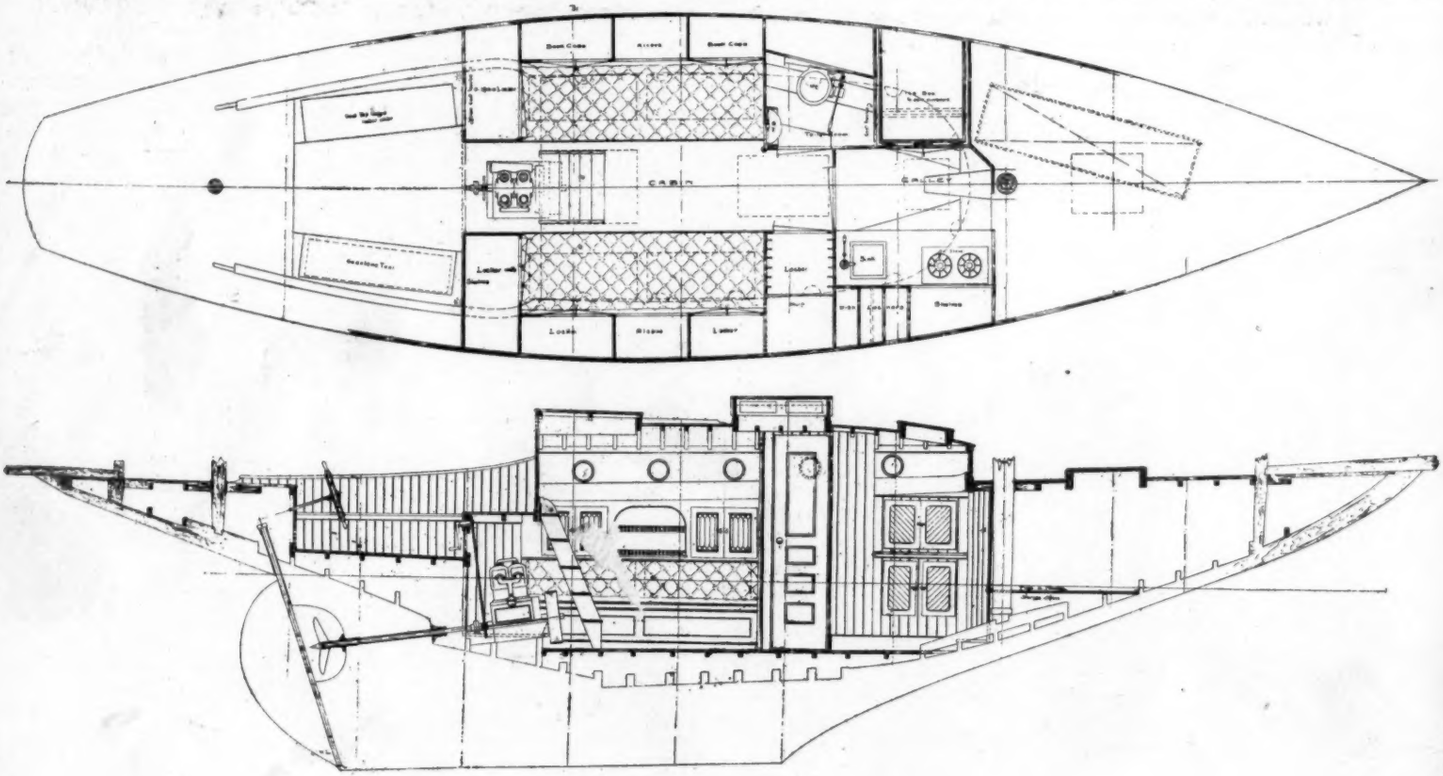
IT is a relatively simple matter to design a small boat which will be able, and rather easier nowadays to design one for speed; but to secure a design which will combine both of these desirable qualities without so great a sacrifice of either one to the other as to restrict the usefulness of the craft to narrow limits, is the goal striven for by every naval architect who attempts to turn out an "all-around boat." It is because the 25-foot waterline yawl whose plans (from the board of Bowes & Mower, of Philadelphia) appear on this page seem to us very nearly an ideal example of the small all-around boat that we believe her type deserves special mention in these pages. All yachtsmen enjoy giving the other fellow their wake, and have a tendency on this account to lean rather toward speed than sea-going qualities in a boat; for the out-and-out off-shore cruiser, especially in the smaller sizes, is usually too chunky and carries too light a rig to make much of a showing with the club fleet in light airs on smooth water.

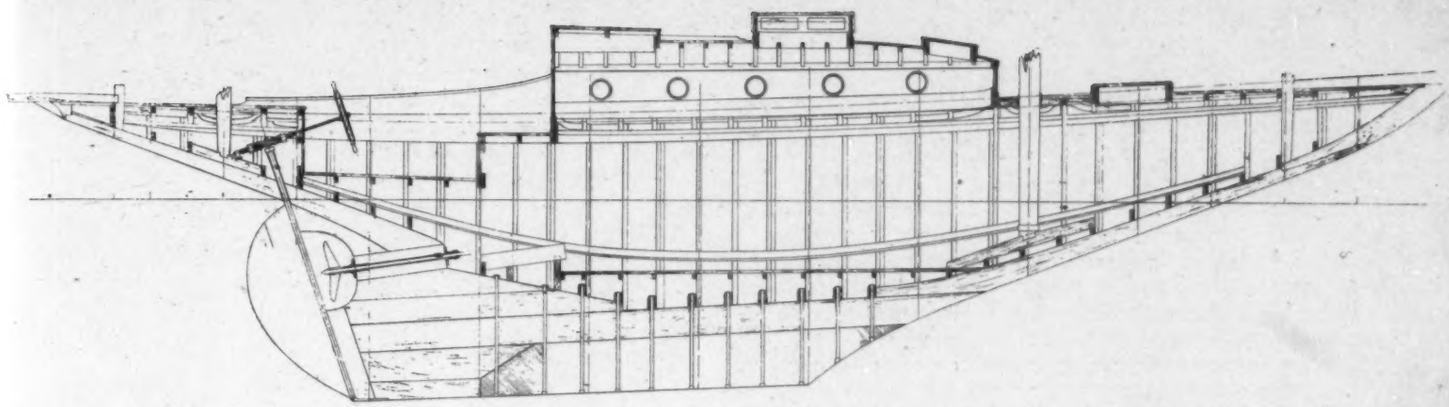
For this reason every time a designer proves by his work that it is a possible thing to build an able boat which has a fair turn of speed as well, he is doing the sport of yachting a real service by enticing us back to a wholesome type of craft.

The principal dimensions of this yawl are: Waterline length, 25 feet 10 inches; length over all, 39 feet; beam, 9 feet 9 inches; draft, 5 feet 3 inches.

She has good freeboard and an easy, if not a very pronounced, sheer. The overhangs are a compromise between the extreme of the racing sloop and the short ends of the offshore cruiser. Her bow is admirable in this respect, showing good buoyancy and easy entrance, and yet not so flat-floored as to pound, as does the racing machine, when being driven into a head sea.

Construction is of best materials and very substantial, with every third frame doubled. Ballast consists of an iron casting on the keel secured by through-bolts. The interior accommoda-



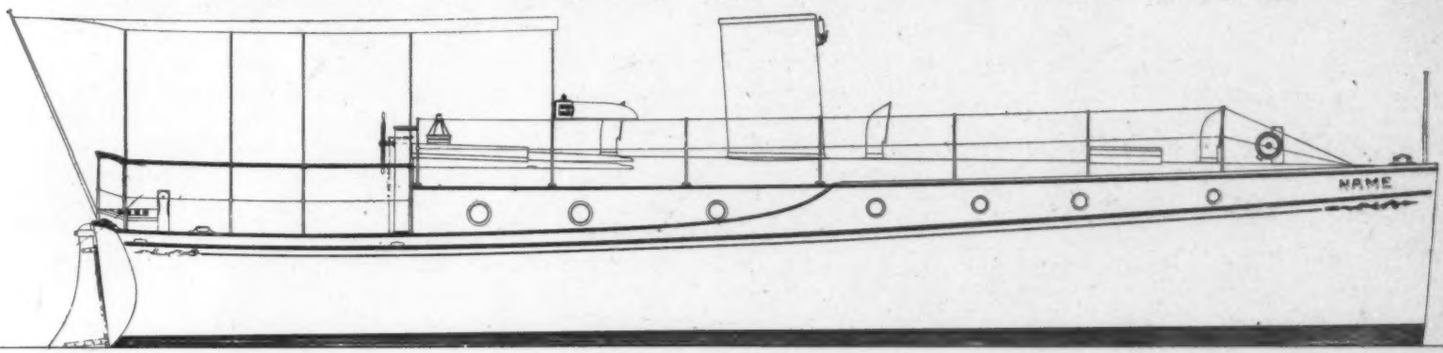


tions have been worked out with an eye to the greatest possible comfort in a limited space. The galley and ice-box (which drains overboard) are at the forward end of the cabin, with a scuttle overhead for ventilation. The galley is shut off from the living quarters by a bulkhead. Abaft of this are a toilet room, on the port side, and a large clothes locker opposite. The berths are wide, and have lockers under and bookcases and shelves above.

Auxiliary power is supplied by a two-cylinder gasolene motor located under a bridge deck at the forward end of the cockpit. It is made easily accessible by removing the companion steps. An excellent innovation, however, is the chain and sprocket gear, which allows the engine to be cranked by the helmsman without leaving the cockpit.

The boat carries a moderate yawl rig with single headsail. She should prove an easy boat for two men to handle and a good sailor.

40-Foot, Sea-going Power Cruiser



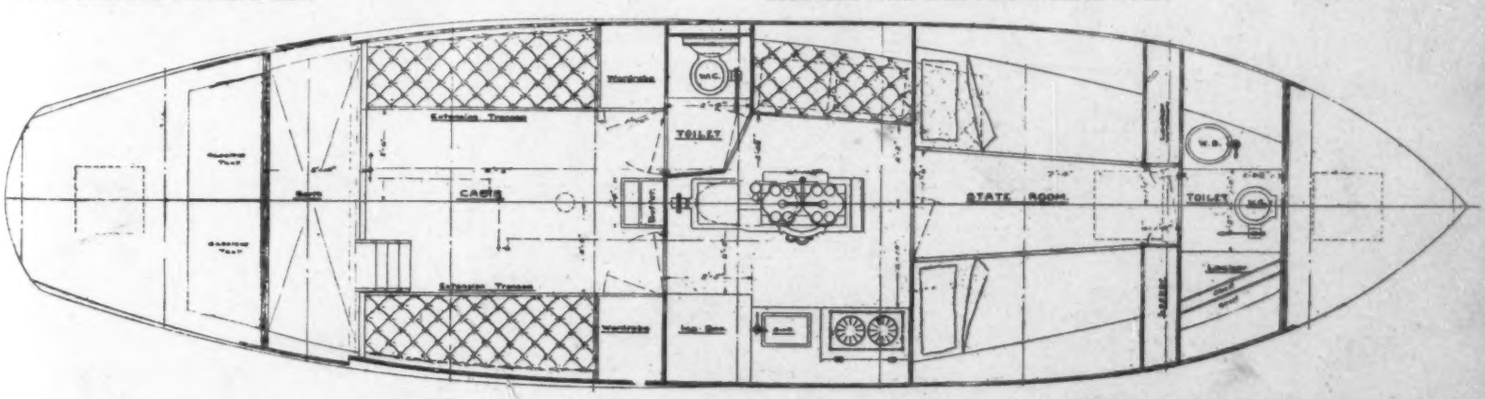
THIS cruising power boat, with comfortable accommodations for five men and capable of making nearly 12 knots with her 40 H. P. Sterling engine turning up 650 r. p. m., was designed by Bowes & Mower, of Philadelphia, and is of much the same type as the Dream, which won this year's Bermuda race. The principal dimensions are: Length over all, 40 feet; length waterline, 39 feet 2 inches; beam, 10 feet; draft, 2 feet 10 inches. The boat is handled from the flush deck aft.

Going down the companionway, one finds himself in a roomy cabin, which has a large extension transom on either side. Just abaft the cabin and under the main deck is a 'thwartship berth which would accommodate a giant, as it extends clear across the boat. The main cabin has also large wardrobes for clothes and a buffet at the forward end.

Next comes the combination engine room and galley, and forward of this again is a stateroom with two berths. This stateroom has its own lavatory, and there is another one on the port side, off the main cabin. The whole scheme of the accommodations has been kept simple, and yet there has been no waste of space.

Directly over the engine is a large false stack, which carries the muffler and acts as a ventilator for the whole boat. This is especially useful in bad weather when water is coming over the bows so that the ordinary cowls cannot be used.

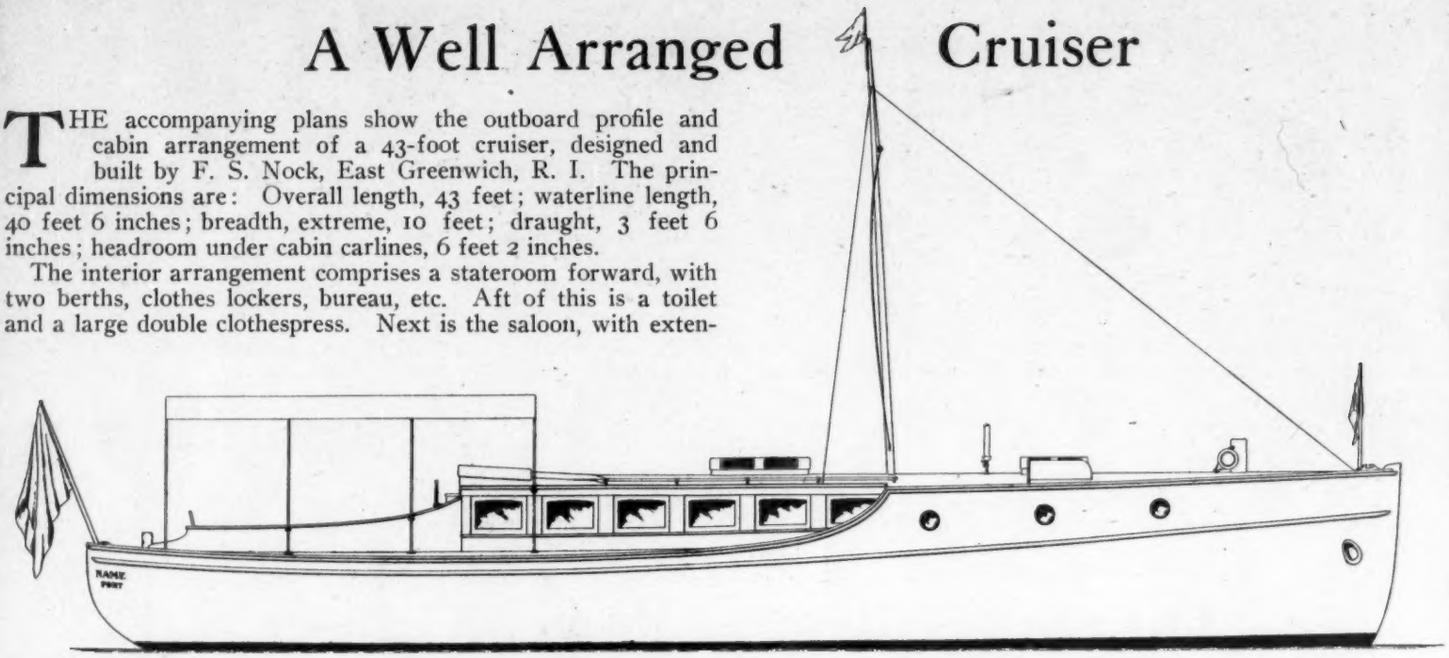
The boat is beautifully proportioned, having admirable freeboard, without appearing topheavy. The generous flare of her bows may be seen in the accommodation plan by comparing the deck line with that of the cabin floor.



A Well Arranged Cruiser

THE accompanying plans show the outboard profile and cabin arrangement of a 43-foot cruiser, designed and built by F. S. Nock, East Greenwich, R. I. The principal dimensions are: Overall length, 43 feet; waterline length, 40 feet 6 inches; breadth, extreme, 10 feet; draught, 3 feet 6 inches; headroom under cabin carlines, 6 feet 2 inches.

The interior arrangement comprises a stateroom forward, with two berths, clothes lockers, bureau, etc. Aft of this is a toilet and a large double clothespress. Next is the saloon, with extension berths, lockers and table. The combination engine room and galley is very compact. On the starboard side there is a large ice-box, provision lockers and tool chests. On the port side are dish lockers, sink, provision lockers, Shipmate range, kerosene stove, etc.



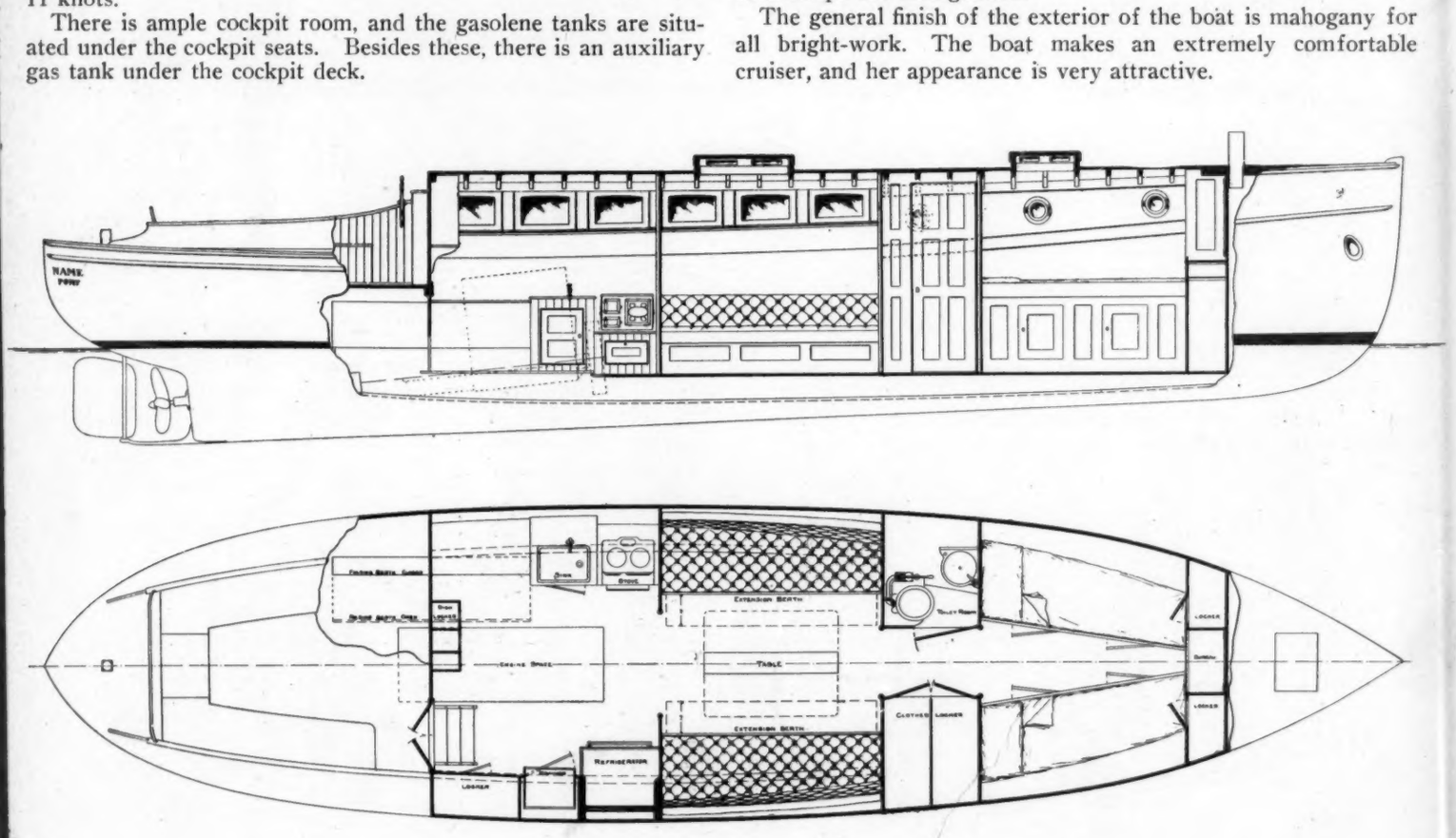
The engine is a four-cylinder, heavy-duty motor of 6½ inches bore and 8 inches stroke. The maximum speed is a little over 11 knots.

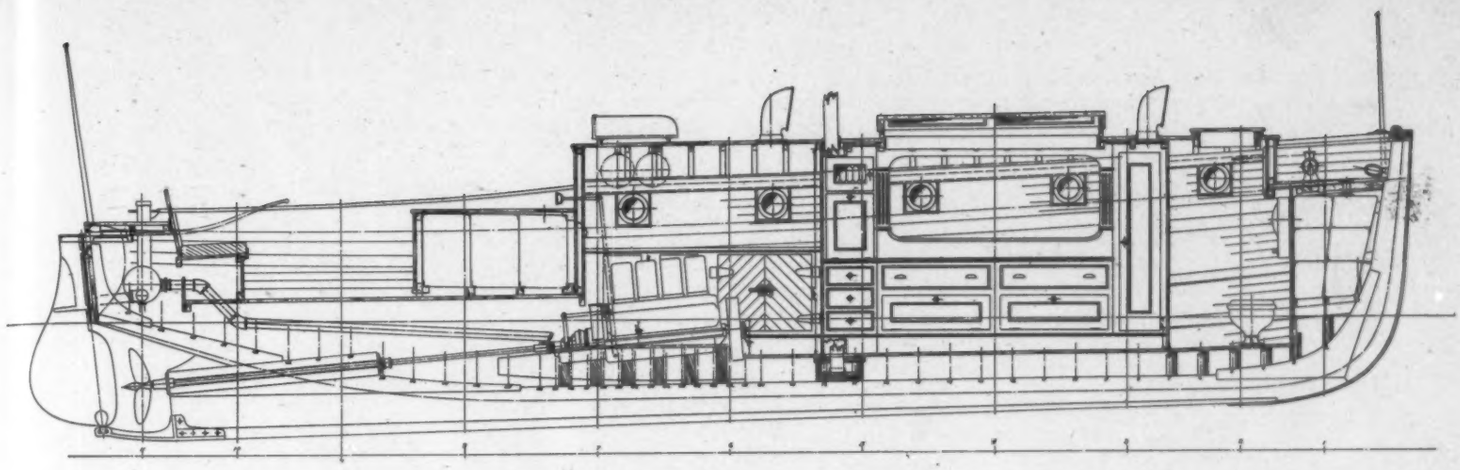
There is ample cockpit room, and the gasolene tanks are situated under the cockpit seats. Besides these, there is an auxiliary gas tank under the cockpit deck.

The interior finish is cypress, the rails and stiles of light material with dark panels, and mahogany mouldings are worked in around the panels. Under sides of deck and deck beams are finished in white enamel. The cabin affords ample sleeping accommodation for six persons, besides a berth for the crew.

The lighting system is very complete, being electric, with kerosene lamps for emergencies.

The general finish of the exterior of the boat is mahogany for all bright-work. The boat makes an extremely comfortable cruiser, and her appearance is very attractive.

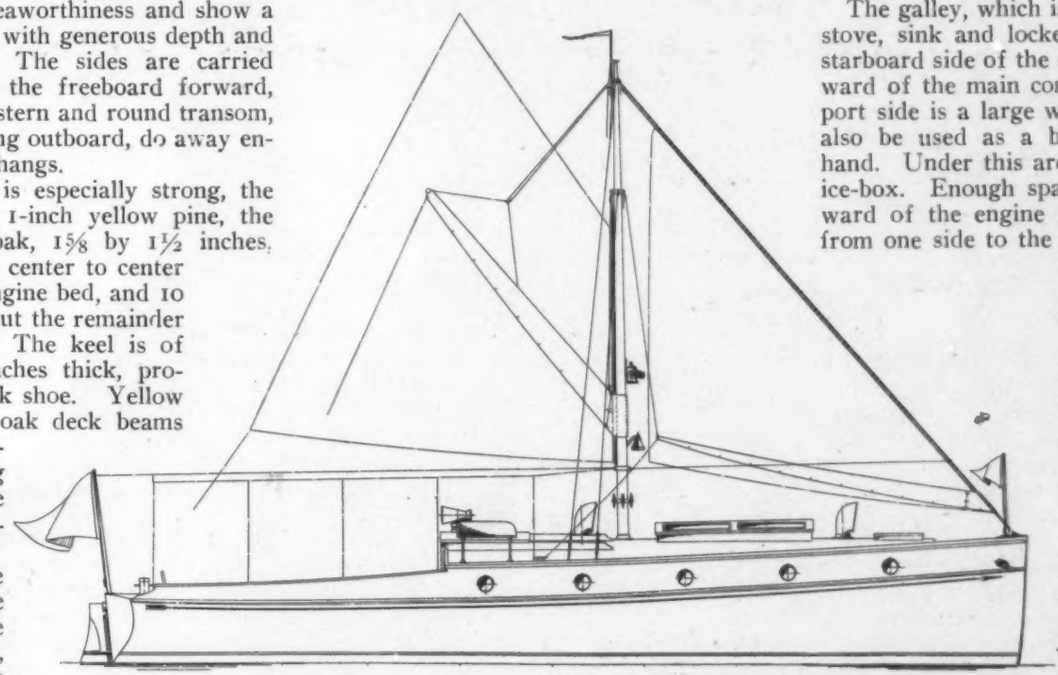




A 35-Foot Power Cruiser for New England Waters

THE accompanying plans are those of a 35-foot, raised-deck power cruiser designed by Messrs. Swasey, Raymond & Page, of Boston, for use on the eastern end of Long Island Sound and in adjacent waters. The lines are laid down primarily for seaworthiness and show a full-bodied hull with generous depth and good deadrise. The sides are carried up, to increase the freeboard forward, while the plum stern and round transom, with rudder hung outboard, do away entirely with overhangs.

Construction is especially strong, the planking being 1-inch yellow pine, the frames white oak, 1⅝ by 1½ inches, spaced 5 inches center to center alongside the engine bed, and 10 inches throughout the remainder of her length. The keel is of white oak 5 inches thick, protected by an oak shoe. Yellow pine stringers, oak deck beams and teak exterior finishing are some of the important structural features.

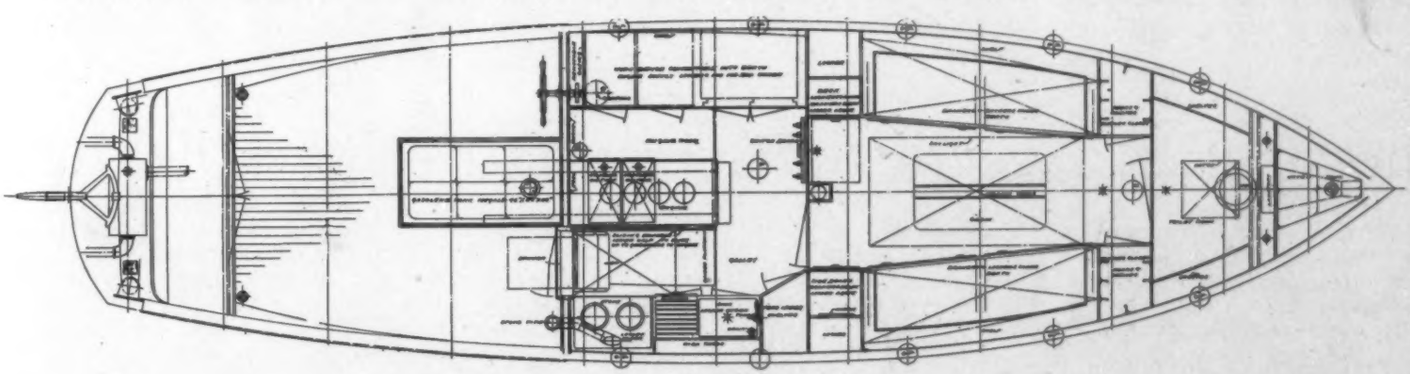


Excellent use has been made of the space below decks, which is more ample than that usually found on a boat of this size. The fresh-water tank is located in the eyes of the boat: just aft of this comes the toilet room, which has its own hatch and is bulkheaded off from the main cabin. The latter contains two wide, built-in berths, with lockers and drawers under, giving ample storage room for clothes, etc. At the after end of the port berth is a writing desk, while opposite, on the starboard side, is a small sideboard with a linen closet back of it.

The galley, which is equipped with a coal stove, sink and lockers, is located on the starboard side of the engine room, just forward of the main companionway. On the port side is a large workbench, which may also be used as a berth for engineer or hand. Under this are tool lockers and the ice-box. Enough space has been left forward of the engine so that one can pass from one side to the other without danger of running foul of the flywheel.

The cockpit is large and roomy, being of the shallow, self-bailing type. A rather novel feature is the placing of the 100-gallon fuel tank at the forward end of the cockpit instead of holding the weight low in the hull. This arrangement has the virtue, however, of keeping the tank on deck, where a gas leakage can do no harm; and it may also check the boat's tendency to roll by lowering slightly the metacentric height.

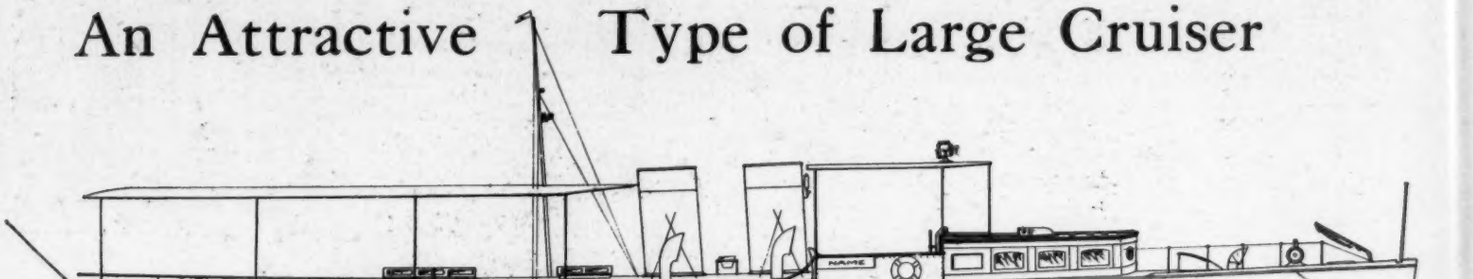
With her 20 H. P., 4-cylinder Ralaco motor turning a 24-inch propeller at 600 r. p. m., the boat can do 9½ knots. Her cruis-



ing radius is 300 miles. An auxiliary jib-and-mainsail rig is carried for use in emergency and to cut down fuel consumption on long runs with a fair wind. Engine controls lead to cockpit.

Lighting is by electricity. The designers inform us that this boat can be built for from $3,500 to $4,000, complete, varying with the locality, engine and outfit.

An Attractive Type of Large Cruiser



SINCE the application of the steamer type of hull to the design of large power boats has come into vogue naval architects have produced some very good-looking craft along this line. An example, shown herewith, is from the board of William J. Deed, Jr., of Boston. The boat is 61 feet 9 inches over all, 58 feet on the waterline, and has 11 feet 10 inches beam and 3 feet 10 inches draft.

The engine compartment is amidships between watertight steel bulkheads. With the ventilation given by the four cowls and the stacks, this part of the ship should be as comfortable and as free from fumes as an engine room can possibly be made. Incidentally, the two-stack arrangement adds greatly to the appearance of the boat, and carries out excellently the illusion of size given by the steamer-like stern and low deck houses.

The two gasolene tanks, of 350 gallons each, are carried in the motor room alongside the twin-screw engines. This is an excellent scheme, for two reasons: it not only concentrates the weights in the center of the ship where they will cause least strain upon the hull, but it absolutely eliminates the smell of gasolene from the living quarters of the boat and greatly reduces danger of fire or explosion. It will be noticed that the bulkheads are without opening. Access to the motor room is had only by means of a hatch on deck.

A double stateroom, full width of the boat, occupies the after end of the accommodation plan, and between this and the owner's large stateroom is a lavatory.

The galley is located just forward of the engine room and is of ample proportions. Forward of this, again, is the combined pilot house and dining saloon. At the forward end of the saloon is a steering wheel for use when the bridge deck is made uncomfortable by the weather. The wheel is of the automobile type, mounted on a vertical shaft, and is covered by a table when not needed. The transoms in the saloon can be made up to sleep two persons. Locker and closet accommodation is excellent throughout.

The crew's quarters are in the forepeak, with another unbroken bulkhead between forecastle and owner's quarters.

The boat's speed is estimated at 14 knots.

Shoveller, An English Design With Novel Features

AN odd-looking power cruiser recently made its appearance on the Solent. She has the bow of a Cape Cod catboat, a torpedo boat stern, and a cabin trunk which differs from any existing type. It is this last which constitutes the boat's special claim to originality. As a glance at the photograph on the next page shows, the sides of the cabin, instead of being brought up perpendicularly from the gunwales in the nature of a deadrise (as in the raised deck type), are inclined at a sharp angle towards the center line of the boat, so that there is only a narrow cabin top between—just wide enough to take the engine room hatch.

It is claimed for this design that it makes a better sea boat, and offers less hold to the wind or a boarding sea than either the trunk cabin or raised deck type. That this must be so, seems

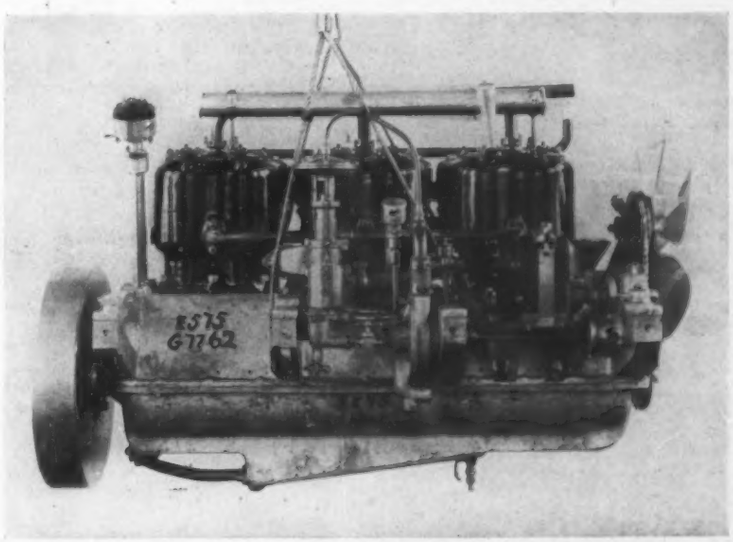
evident at a glance; but, on the other hand, one is tempted to believe that she would be a very wet boat in a head sea, because every bit of spray which flies above the weather rail will be swept the length of her without opposition. However, a height of cabin has been obtained by this method of construction which would have been impossible, or at the least unsightly, if perpendicular lines had been adhered to. The headroom of 5 feet 10 inches is quite unusual, considering that the boat draws only 2 feet 5 inches.

An interesting structural feature is the fact that the cabin trunk (if it may be so called) is carried by bent timbers, which go right around from one gunwale to the other, instead of by frames and carlines. The engine room is forward and the main cabin aft. The cockpit is 4 feet long, fore and aft, and has the steering wheel at the forward end on the cabin bulkhead.

Shoveller recently made a run from Westminster to the Solent in 18 hours, including a stop of over an hour at sea to unwind a net line from her propeller. Her length over all is 40 feet, and beam 7 feet.

An English Cruiser for the Great Lakes

AS a rule, the individual pleasure power craft of moderate dimensions built in England is not of great interest to American yachtsmen, as they are often in design several years behind similar craft turned out by American builders. But Cygnet, a cabin cruiser, illustrated on this page, is certainly out of the ordinary running, and is of interest not merely because she is for service on one of the Canadian lakes, but because she is a handsome boat, and was turned out from the Cowes yard of Sam Saunders, builder of such notable craft as Maple Leaf IV, Ursula and Pioneer. It will be seen that she is well suited for day or week-end cruising on inland waterways, having good cabin and cockpit accommodation, while the Pullman style of cabin affords bright and cheery internal space, giving, at the same time, excellent headroom.



Cygnet is carvel built, of a single skin of mahogany, and is 42 feet in length by 8 feet beam, with a draught of 2 feet 4 inches. Her engine is a six-cylinder Napier, nominally rated at 38.4 horsepower, but developing 50 horsepower at normal speed.

The cabin affords comfortable accommodation for eight persons, and has a headroom of 6 feet. There is an awning for the after cockpit. Forward of the cabin is a lavatory on the one side and a combined pantry and galley on the other. Forward, again, is the engine room.

The engine of Cygnet has both high-tension magneto and synchronized ignition.

Mess Room Talk

IN this Department we will answer questions concerning the problems which boat owners are constantly running up against in the operation of their motors or the handling of their boats. Theoretical as well as practical questions will be answered promptly by mail, and when of sufficient interest will be printed for the benefit of YACHTING readers. This service is free. Don't hesitate to make use of it. Address, Information Department, YACHTING, 141 W. 36th St., New York City.

Propeller for 12-Horsepower Engine

NOVA SCOTIA.

I have a two-cylinder, two-cycle 12-horsepower engine, jump spark ignition, and am using a 22-inch diameter, 26-inch pitch two-blade propeller —blades 8¼ inches wide near periphery. Engine was designed to turn 850 revolutions per minute, but I cannot get it above 700 revolutions per minute. My boat is 29 feet 6 inches by 5 feet 11 inches, of fairly good lines, and makes 10½ knots per hour. Would you advise changing propeller to a 20-inch three-bladed wheel (and if so what pitch) in order to get the engine up to 850 revolutions per minute? How much increase in speed could I reasonably expect? W.

With a 12-horsepower engine better results would no doubt be obtained by the use of a three-bladed propeller. It is impossible to recommend the proper pitch for a three-bladed, 20-inch propeller that will allow the motor to turn at 850 revolutions per minute without knowing the size and shape of the blades. It, therefore, depends upon the make of wheel selected, and the manufacturer will be able to recommend the necessary pitch.

If by 10½ knots an hour you mean real *knots*, or nautical miles, it is apparent that your boat is making 12 statute miles an hour. This is pretty good speed for a boat of your size to make when driven by a two-cylinder, 12-horsepower, and I doubt if this rate will be improved on by more than a quarter or a half a mile an hour.

A Lark Model Auxiliary

SEABREEZE, FLA.

I am thinking of building a sailboat for shallow water. My idea is to give her a lark model bottom, but with 18 inches freeboard amidships and 30 inches freeboard forward and a spoon bow. She will be 22 feet over all and have 7 feet beam. I expect to rig her as a sloop, and pretty heavily. She will be lightly built. What speed can I expect with a 6-horsepower, two-cylinder engine of 600 revolutions per minute, with and without sail?

Can you tell me whether anyone has ever tried power in a true lark model, and what were the results. C. K. G.

It seems to us that you will find 30 inches freeboard forward and 18 inches amidships excessive for a boat of this type. The boats, as you know, have no hold on the water and can only be used in smooth water, and a high freeboard, while making them a little dryer, would undoubtedly detract from their sailing qualities and would not make them any more seaworthy under sail. Under power a boat of this type, if lightly built, should be fairly easy to drive. Without knowing the weight of the boat I should say that with a 6-horsepower, two-cylinder engine at 600 revolutions per minute, you might get, under power alone in smooth water, 9 or 10 miles an hour.

The speed that you can get with sail depends entirely upon the wind. Using both sail and power you could not expect to get any more speed than you could out of power alone with a 6-horsepower engine. We have never heard of any one trying power in a pure lark model. If tried, such a boat would undoubtedly be fast in smooth water.

Topsail Rig for Small Cruiser

BRIDGEPORT, CONN.

Will you be so good as to give me the benefit of your advice on the question of rigging a 30-foot waterline cruising sloop with a topsail? The high-peaked mainsail seems to have driven the old-fashioned topsail almost off the Sound, so far as small boats are concerned, and I cannot quite understand why it should be. What are the relative advantages of the two rigs? O. S.

The modern tendency in small yacht design is to simplify as far as possible all rigging. Carrying a topsail involves having four more pieces of running rigging—halyard, tack, sheet and clew-line—than are required without. Then, too, a mainsail and topsail combination will not do as effective work as will the same area of canvas in one sail. However, there is something on the other side to be said for the good old topsail, namely, that it is a whole lot easier and quicker to clew up a topsail than to tie a reef in the mainsail, and the effect in relieving the vessel is about the same. By having the clew-line pass through an eyelet in the center of the sail it can be clewed up into a tight little bunch, so that on a small boat it is never necessary to send a man aloft to tie it up. Provided you don't mind a few extra lines leading down to deck a topsail is a pretty handy institution on a cruiser.

The Whaleboat as a Cruiser

Attached is sketch of 28-foot whaleboat, about which I should like to ask some questions:

(1) Would she make a suitable small cruiser for two or three to knock around in in the Bay of Fundy?

(2) Would she be a weatherly boat in a blow with the shown draft? (3 feet.)

(3) Has she enough beam (7 feet 6 inches) to carry the high, narrow rig of a ketch without excessive ballast?

(4) Is the sail plan a good one for that boat?

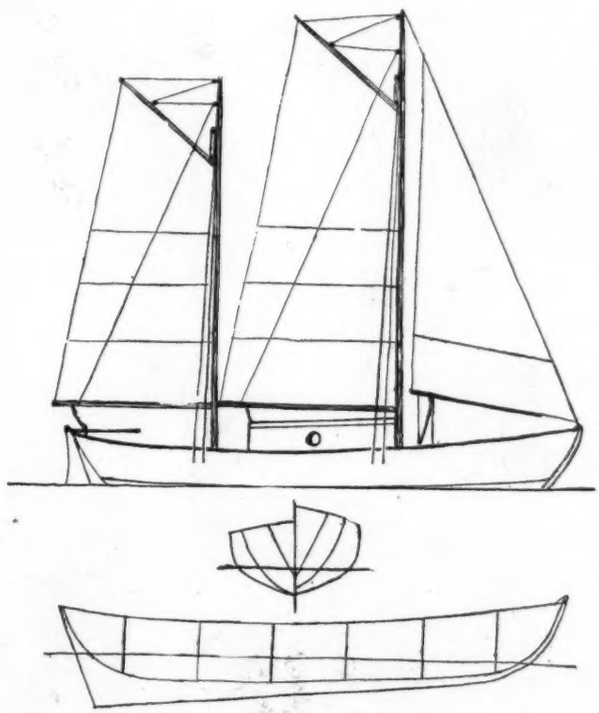
(5) Would you suggest any changes in the hull or rig?

As we did not want power I have increased the draft and given her a larger sail plan than in the original design. C. A. C.

1. The whaleboat type of hull is as able and seaworthy for its size as any in the world when equipped with the proper rig and decked over, but it is not intended to carry as much sail as a catboat or a keel sloop of the same length. The rig, as shown in your drawing, seems rather too high.

2. The keel shown in your drawing is hardly deep enough to enable the boat to go to windward in a heavy blow, as there is practically no forefoot. Would suggest either a centerboard or a false keel secured to the present one by through bolts.

3. The beam cannot, of course, be changed. If you have a keel



LINES AND RIG OF CRUISING WHALEBOAT

with outside ballast, she would possibly be able to carry the rig shown in the drawing. Certainly not without, and even so the rig seems rather higher than is approved in a boat of this type.

4. The general criticism of your rig is that in the effort to get a large sail area and at the same time keep all your sail inboard you have got such high, narrow sails that it would be very hard to make them draw properly in going to windward, for the reason that the peak would sag off even with the boom sheeted down amidships. Also, the jigger-mast has been stepped so far forward that neither mainsail nor mizzen has a great deal of driving power. Would suggest a lower rig with a longer foot on the mainsail and the jigger-mast stepped about 2 feet farther aft. This would mean that the mizzen boom, if kept the same length, would extend about 3 feet over the stern, which is not enough to do any harm in the case of such a small sail. This rig would not only be more powerful but would present a much better appearance.

5. The question as to rig already answered. The only change in hull would be to build on a keel or put in a centerboard, as already noted. In the case of keel carrying outside ballast no inside ballast need be used; otherwise the boat should be brought well down to her waterline with inside ballast, preferably pig iron in short lengths, laid along under the floor timbers, so that it could be easily removed when the boat is hauled out.

Some Fore-and-Aft Queries

PHILADELPHIA.

Kindly inform me on the following points:

(1) Is not the mast on all sailboats carrying a jib stepped in a certain relation to the waterline, regardless of fore-and-aft overhangs?

(2) Where should the mast be stepped on a sloop of the new "P" class?

(3) What formula is now in use for calculating the rating of sailboats, and how do they arrive at the handicap?

(4) In a picture which I have seen of the schooner Westward, it looks to me as if the foot of the foresail is longer than its boom, so that the clew reaches something like 6 feet beyond the boom and *past* the main mast. I can see how this may be worked when close-hauled, but I can't quite imagine how it will behave when sailing before the wind.

I have noticed this peculiarity on several cuts of both two and three-masted schooners, but have never been able to obtain any reliable information on this point; even old salts give me the laugh and call it an impossible stunt. E. W.

Answering your questions in the order in which they are asked I would say:

1. While the masts of all sailboats carrying a jib do not necessarily have to be placed in a fixed position as regards waterline length, the two do bear some relation, inasmuch as the center of effort of the sail plan should come near the center of lateral resistance of the boat, the center of effort of the sail being the approximate center of the entire sail plan, including the jib. It is the proper relation to these two that give a boat the proper balance.

2. The position of the mast on a boat of the "P" class, new type, would depend also on the sail plan. Usually, however, the mast is stepped fairly well aft, probably 9 or 10 feet aft of the stem at the waterline. This gives a jib with a foot approximately half the length of the main boom, though this may vary in different sail plans.

3. The formula in use for rating sailboats is as follows, and it may be found, with full explanations, in the yearbook of the Yacht Racing Association of Long Island Sound:

"1. Yachts shall be rated for classification and time allowance according to the following formula:

$$\text{Rating measurement} = 0.18\,\frac{L.\sqrt{S.A.}}{\sqrt[3]{D}}.$$

(Eighteen per cent of the product of length multiplied by the square root of sail area divided by the cube root of displacement.)

"The result is the measurement for classification and time allowance of sloops. Yawls shall be rated at 93 per cent and schooners at 90 per cent of their actual measurement as determined from the rating formula."

When the rating of boats is known, handicaps are based on tables showing the allowance between boats of different length *per mile*.

4. In regard to foot of the foresail of a schooner sometimes being cut longer than the boom so as to extend beyond the mainmast, I would say that this is called a lug foresail, and is usually carried on racing schooners, and is of some use when close hauled. The clew of this lug has a separate purchase or sheet on it, and when slacked off both the fore sheet and this lug purchase are slacked off together. As a matter of fact, when running before the wind a racing schooner usually uses a spinnaker and the foresail is of very little use.

Long Island Sound Yacht Racing Championships

MR. JAMES W. ALKER, secretary of the Yacht Racing Association of Long Island Sound, has announced the championship winners for 1912 in the regular regattas of the association in classes of 38 feet and under racing measurement. The conditions call for Corinthian helmsmen, and awards are made on the basis of points scored in races held under the auspices of the association. In order to qualify for the championship a yacht must start on at least one-half the race days on which races are given for her class.

One of the striking features of the report is the large number of boats that did not qualify. This may have been due to bad weather in several of the later races and to light breezes, which kept many boats from getting to the line on time to start in some of the others.

CLASS P

YACHT.	Starts.	1sts.	2ds.	3ds.	Percentage.
Corinthian	13	6	4	3	75
Joyant	12	5	3	3	70
Windward	10	1	3	3	50
Cara Mia	9	3	2	1	d.n.q.

N. Y. Y. C. THIRTIES

Nepsi	14	4	4	2	76.6
Caprice	14	3	4	1	68.5
Phryne	11	2	2	0	66.6
Rowdy	14	2	3	2	58.5
Alera	16	3	3	1	56.1
Okee	10	2	0	4	49.4
Ibis	13	0	1	4	46.3
Carlita	14	1	0	2	44.4
Juanita	15	0	0	0	39.8
Dahinda	2	0	0	1	d.n.q.
Banzai	2	0	0	0	d.n.q.
Lena	2	0	0	0	d.n.q.

L. I. SCHOONERS

Helen II	13	6	2	3	77.2
Vandalia	13	5	4	1	75.0
Moira	15	2	4	6	64.0
Daffodil	11	4	0	1	55.5
Rival	10	0	3	0	53.5
Alicia	16	0	3	4	36.8
Alys II	5	0	0	0	d.n.q.
Algol	2	0	1	1	d.n.q.

CLASS Q

YACHT.	Starts.	1sts.	2ds.	3ds.	Percentage.
More Joy	11	6	2	2	73.0
Edmee	12	6	2	2	59.4
Essex	13	1	2	3	43.2
Suelew	6	3	2	0	d.n.q.
Alice	4	1	2	0	d.n.q.
Naiad	1	0	1	0	d.n.q.
Alyce	1	0	0	1	d.n.q.
Malolo	1	0	0	0	d.n.q.
Kathryn	1	0	0	0	d.n.q.

AMERICAN RACEABOUTS

Cliphora	13	9	2	1	69.1
Maryola	12	4	7	1	60.4
Rascal	4	3	0	0	d.n.q.

LARCHMONT INTERCLUB

Yukan	11	2	3	3	72.0
Hamburgh II	12	4	1	1	64.9
Whiff	14	5	2	1	64.7
Lewanna	14	3	5	0	58.8
Bella	15	1	1	6	55.4
Lecygne	6	0	0	0	d.n.q.
Triton	4	0	1	0	d.n.q.
Wild Thyme	6	1	1	2	d n.q.
Festina	9	2	4	2	d.n.q.
Dagmar	6	0	0	0	d.n.q.
Babette	1	0	0	0	d.n.q.

MANHASSET BAY TWENTIES

Mlle. Boss	14	8	6	0	76.9
Scylla	13	6	7	0	—

JEWEL S. CLASS

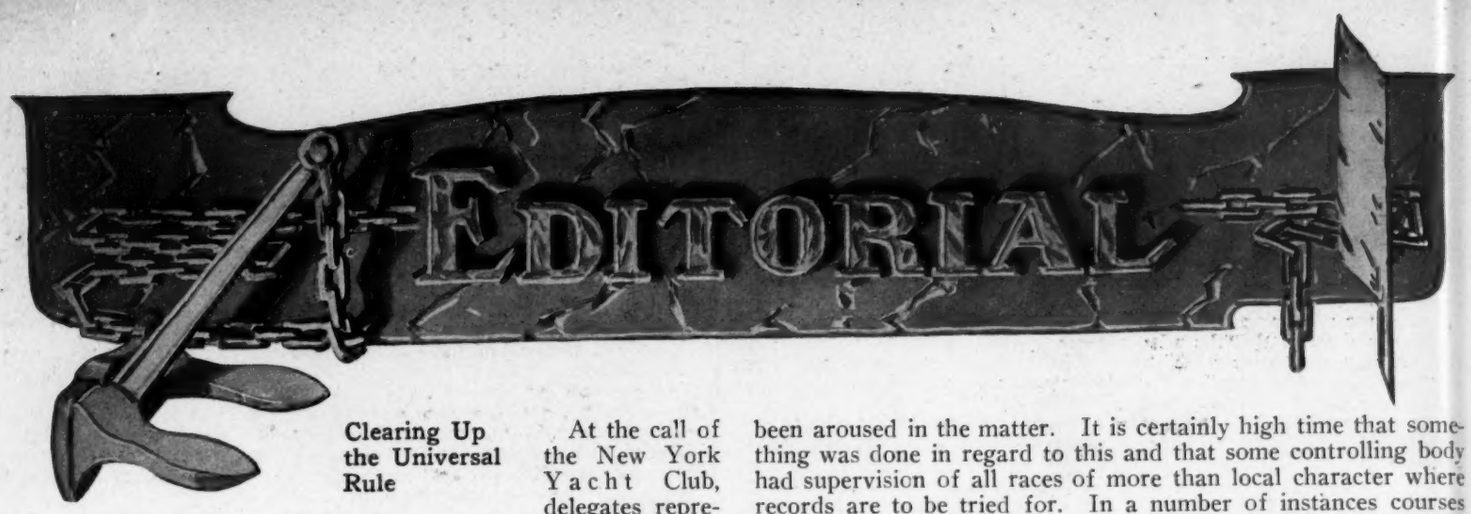
YACHT.	Starts.	1sts.	2ds.	3ds.	Percentage.
Jade	12	1	3	5	62.2
Amethyst	9	0	1	3	d.n.q.
Sapphire	7	1	0	3	d.n.q.
Topaz	9	1	4	1	d.n.q.
Brilliant	9	2	3	1	d.n.q.
Catseye	5	0	0	0	d.n.q.
Opal	4	0	1	0	d.n.q.
Turquois	6	6	0	0	d n.q.
Emerald	4	0	1	1	d.n.q.

STAR CLASS

Little Dipper	12	10	1	0	91.0
Snake	10	1	1	2	50.7
Vega	6	1	1	1	d.n.q.
Twinkle	9	1	1	0	d.n.q.
Geminii	9	1	3	1	d.n.q.
Argus	4	1	2	0	d n.q.
Cynosure	8	2	2	1	d.n.q.
Solikel	4	0	1	1	d.n.q.
Faraway	6	0	4	0	d.n.q.
Comet	5	0	0	1	d.n.q.
Mercury	5	0	0	0	d.n.q.
Taurus	2	0	0	0	d.n.q.
Pegasus	1	0	0	0	d.n.q.

AMERICAN Y. C. DORIES

Tautog	10	8	1	0	77.1
Faraway	3	1	0	0	d n.q.
Madeline II	6	1	3	0	d.n.q.
Alice	7	2	3	1	d.n.q.
Rockey	6	0	0	5	d.n.q.
Wampus	5	0	0	1	d.n.q.



Clearing Up the Universal Rule

At the call of the New York Yacht Club, delegates representing the various yacht clubs and associations comprising what is called the Atlantic Coast Conference met at the New York Yacht Club on October 11 to clear up certain ambiguous points in the present rating rule. It was not the purpose of the conference to make any radical changes in the present rule or its underlying principles, but merely to clear up some points that have caused more or less trouble, and to add some rules and restrictions that will tend to benefit the sport. The principal point that was cleared up related to the measurement of L and the elimination of hollow or concave lines at the points of measurement, the ambiguity of the rule as it was being responsible for the protest in the Manhasset Cup series.

Under the new rule any concavity in the stem or stern profile line where they cross the waterline shall be bridged by a straight line equal to one-half of the greatest waterline beam. Concave lines in sections at the points of measurement for quarter beam shall be bridged in the same way. This effectively puts a penalty on hollow water lines employed for the sake of getting a larger boat on a certain rating.

Realizing, also, the danger of trying to produce abnormally large boats on a certain rating, and feeling it necessary to limit this either by limiting the sail area or a penalty on displacement, it was decided to limit the displacement (and thus automatically the sail area that can be carried) by a formula which will be incorporated in the rules.

Another important change that should have a beneficial effect was the vote to appoint a standing committee, composed of members of each of the principal yacht racing associations and yacht clubs in the conference, to whom could be carried any questions involving interpretation of the rules by any of the parties involved in a protest—a sort of court of last appeal, as it were. This committee will have no jurisdiction as to facts involved under a protest, the regatta committee's decision being final as to this; but any findings of a regatta committee involving interpretations of these rules may be appealed to this committee by any of the parties involved in the protest. Such an appeal shall be a written representation of the facts, must be endorsed by a majority of the flag officers and filed with the secretary within two weeks of the receipt of the regatta committee or measurer's decision, as the case may be, and shall be decided by a majority vote at any meeting for which notice of such appeal has been made. This is a good move and should have far-reaching effect, in that it may lead eventually to a body having control of organized racing.

Some of the minor changes were the limiting of the number and length of battens that could be used in a sail and the barring of "lug" foresails on all schooners. The changes will not be retroactive, and will not affect boats designed and contracted for prior to October 11, 1912. It was proposed to call the body the Yacht Racing Conference instead of the Atlantic Coast Conference, as being more indicative of its scope.

For Honest Records

There has been so much criticism concerning alleged records of speed boats during the past season, both in regard to the actual timing and to the inaccuracies of the courses, that a great deal of feeling has been aroused in the matter. It is certainly high time that something was done in regard to this and that some controlling body had supervision of all races of more than local character where records are to be tried for. In a number of instances courses have been properly buoyed by competent measurers or by Government surveyors, and the buoys have later been moved without the knowledge of the public, or, often, of the contestants themselves. There is a natural incentive for such a procedure, inasmuch as it always adds to the success of a race meet to have records broken, and good advertising is frequently had thereby; but the practice is reprehensible, is unfair to the public, to the contestants themselves and to other possible entries, and should not be countenanced.

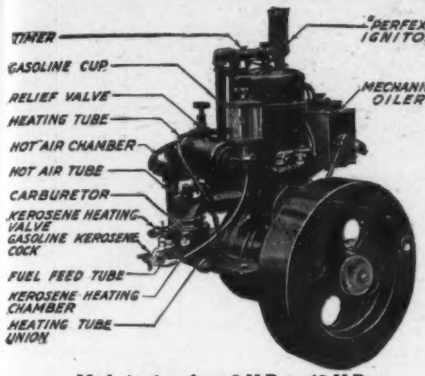
Practically every other form of competitive sport has some controlling body which recognizes the legitimacy of any claim for records, and not only sees that the timing is accurate, but that the course is of the required length, so that no record stands accepted without the sanction of these controlling bodies. Such a controlling association in power boat racing should not only verify the accuracy of every course over which a "record" is made, but should have a representative timer present at all such special race meets. It would thus have control of the granting of championship titles which, under the present system, are loosely used and are little more than a farce. It is not, of course, meant that such a supervision is necessary for all races; but certainly all race meets of a national, international or sectional importance should be properly sanctioned by such a controlling body.

This would also result in the proper tabulating and recording of all records. As it is now, the speeds of boats are not recorded definitely, outside of the newspaper and press reports, and these at best are inaccessible and liable to error, which results in the claiming of records by boats in different parts of the country practically without fear of their being disproved. If the various power boat associations of the United States could get together and form such a controlling body it would be a big step in the right direction. Practically all the yacht clubs and power boat clubs of the country are members of some racing association, and it would not be a very difficult task to get together a national commission with control in such matters. In any particular race the cost of such supervision could be borne equally by the association and the club holding the event, the burden of expense being small in comparison to the benefits incurred. Something must be done if the present state of affairs is not to resolve into a scandal.

Better Speed Boats Needed

If America is to go after the British International Trophy next year, as now seems likely, with any show of success, the boat builders and those who put up the money for the boats should realize that a much stronger type of craft is necessary than raced at Huntington this year. This year's racing proved conclusively that a 20 or 26-footer, or even a 32-footer, is not the proper boat for an international race over a 30-mile course.

Whether the race next year is run on the Solent or at Burham-on-Crouch, even rougher conditions are apt to be encountered than at Huntington this year, and a large boat is practically a necessity. The boats must also be more strongly built than were a number of the boats that tried for a place on the team this year, when many of the hulls could not stand the strain of the power they carried over a 30-mile course.



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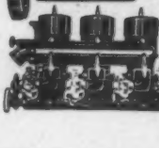

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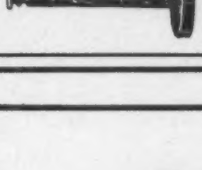

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